THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5366

No. V. OF VOL. I., 1914.
No. 4718. Vol. CLXXXVI. LONDON, SATURDAY, JANUARY 31, 1914. Pp. 160—Price 6d.

ROYAL SOCIETY OF MEDICINE

1, WIMPOLE STREET.

For DIARY of MEETINGS see page 364.

By LESLIE THORNE THORNE, M.D., B.S.

NAUHEIM TREATMENT of DISEASES of the HEART and CIRCULATION.

Fourth Edition. Price 3s. 6d. net.

Pp. viii.+104. With 28 Photographs of the Schott Exercises and 27 other Illustrations.

"It is the best and most practical work on the subject."
—WEST LONDON MEDICAL JOURNAL.

London: Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden, W.C.

New Work. Fully Illustrated. 10s. net.

BY P. LOCKHART MUMMERY, F.R.C.S.

DISEASES OF THE COLON AND THEIR SURGICAL TREATMENT.

Bristol: J. Wright & Sons, Ltd.
London: Simpkin, Marshall & Co., Ltd.

By C. O. HAWTHORNE, M.D.

STUDIES IN CLINICAL MEDICINE.

"A valuable miscellany of clinical studies."—EDIN. MEDICAL JOURNAL.
"Covers the ground of clinical medicine in an able manner."
—CANADA LANCET.
"Should be in the possession of every general practitioner."—PRESCRIBER.
Price 6s. net. Illustrated. Bale, Sons & Danielsson, London.

Just ready. Demy 8vo. Cloth boards. 2s. 6d. net.

PLAIN RULES for the USE of TUBERCULIN.

By R. ALLAN BENNETT, M.B. Lond.,
Physician in Charge Devon County Council Tuberc. Dispy., Torquay.

Written as a guide to those who are intending to work out for themselves some of the problems of Tuberculin Treatment.

Bristol: John Wright & Sons, Ltd.,
London: Simpkin, Marshall & Co., Ltd.

WIDE RESECTION OF THE BLADDER IN VESICAL GROWTH.

New Work. With 4 Plates. Cloth. 3s. 6d. net.

By H. HURRY FENWICK, F.R.C.S.,
Professor of Urology at the London Hospital;
Vice-President of International Society of Urology, and President to its Second Congress.
London: Adlard & Son, Bartholomew-close.

By ERNEST CLARKE, M.D., B.S., F.R.C.S.Eng.,
Senior Surgeon to the Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the Miller General Hospital.

ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE.

Third Edition. Pp. x. + 228. With 86 Illustrations and Coloured Plates. Price 5s. net.

"This volume is the very best of the class that goes into everything with care and thoroughness. ..... The book merits the highest commendation."—CANADA LANCET.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

BY C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

AN OPERATING THEATRE IN PRIVATE PRACTICE.

With Illustrated Supplement.

Price 3s. 6d. net.

London: Harrison & Sons, 45, Pall Mall, S.W.

By J. S. KELLETT SMITH, F.R.C.S.Eng.

LATERAL SPINAL CURVATURE AND FLAT FOOT, AND THEIR TREATMENT BY EXERCISES.

"We may say at once that he has carried out his idea admirably. ..... This is eminently a book suited for the general practitioner wishful to treat the slighter forms of scoliosis or pes planus."—LANCET.
5s. 6d. net. 82 Illustrations. Bristol: J. Wright & Sons, Ltd.

By FREDERICK J. McCANN, M.D.Edin., F.R.C.S.Eng.,
Surgeon, Samaritan Free Hospital for Women, London, N.W.

CANCER OF THE WOMB: ITS SYMPTOMS, DIAGNOSIS, PROGNOSIS, AND TREATMENT.

Fully illustrated. 20s. net.

LIVERPOOL MEDICO-CHIRURGICAL JOURNAL.—"Cancer of the Womb, by F. J. McCann, is a book that can be recommended alike to the general practitioner and the specialist. Written in a fluent manner, it embodies the ripe experience of a renowned operator, trained observer, and patient investigator."

EDINBURGH MEDICAL JOURNAL.—"The book is one of very great merit; it will be read with interest both by the specialist and general practitioner as an authoritative exposition of the important subject with which it deals."

PRACTITIONER.—"Dr. McCann has produced a valuable work which deserves to be widely known."

ST. BARTHOLOMEW'S HOSPITAL JOURNAL.—"The plates are excellent. This is a book we can thoroughly recommend."

London: Henry Frowde and Hodder & Stoughton.

READY TO-DAY—NEW (7TH) EDITION.

STELWAGON'S DISEASES OF THE SKIN.

THE PRACTITIONER'S DERMATOLOGY.

See Saunders' Advertisement on page 5.

ENTHETIC DISEASES (the YOUNG MAN'S PERIL). 2s. 3d. net.

THE PREVENTION OF VENEREAL DISEASES. 2s. 1d. net.
By R. R. RENTOUL, M.D.
To be had from The Manager, 57, Fern-grove, Liverpool, S.

BOOKS BY SYDNEY STEPHENSON, D.O. (Oxon.)

EYE-STRAIN IN EVERYDAY PRACTICE.
1913. Price 3s. 6d. net.
The Ophthalmoscope Press, 24-26, Thayer-street, W.

OPHTHALMIC NURSING.
Third edition. 1912. Price 3s. 6d. net.
The Scientific Press, Southampton-street, Strand, W.C.

NOW READY. 2s. net.

THE IDEALS and ORGANISATION of a MEDICAL SOCIETY.

By JAMIESON B. HURRY, M.A., M.D. Cantab.,
Author of "A History of the Reading Pathological Society."
London: J. & A. Churchill, 7, Great Marlborough-street, W.

By H. BELLAMY GARDNER, M.R.C.S.Eng.

SURGICAL ANÆSTHESIA.

With full instructions for the open ether method.
"A capital exposition of the principles and practice of anæsthesia."—THE LANCET. Messrs. Baillière, Tindall & Cox. Price 5s.

BY E. HURRY FENWICK, F.R.C.S.,

Professor of Urology at the London Hospital.

President Second Congress of International Association of Urology.

With 80 Plates and 15 Text-Figures. 10s. 6d. net.

THE VALUE of RADIOGRAPHY in the DIAGNOSIS & TREATMENT of URINARY STONE.

A Study in Clinical and Operative Surgery.

London: J. & A. Churchill, 7, Great Marlborough-street.

THE FOOD FACTOR in DISEASE, including the Pathology and Treatment of Bilious Attacks, the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, &c.), Gout, High Blood-pressure, &c. By FRANCIS HARE, M.D., Consulting Physician, Brisbane Hospital. For abstract see THE LANCET review—Feb. 18th, 1906, pp. 453 to 455.—Longmans, Green & Co. In two volumes. Price 30s. net.

In the treatment of

Diphtheria

finely powdered "Sozojodol"-Sodium is a standard preparation as a local antiseptic, because it can be applied copiously and frequently without any by-effects. The application is easily made, and the action is immediate because of its ready solubility.

"Sozojodol"-Sodium

finely powdered, in the pure state, or mixed with equal parts of flowers of sulphur, insufflated several times daily, is non-toxic, non-irritant, and convenient, and may be relied upon even in mixed infections of the naso-pharynx where the prognosis is doubtful.

Vademecum of "Sozojodol"-Treatment and trial samples gratis from

H. TROMMSDORFF, chem. works,
AIX-LA-CHAPELLE 19 G.

In virtue of its neutral character

Merjodin for Syphilis

is a remedy (in tablet form) whose use is on the increase. It is non-irritating and free from by-effects. It is specially indicated in disease of the internal organs, the pharynx and larynx. In combination with other remedies (Hg., Salvarsan, &c.) it increases their effect. Application: 3 × 1–4 tablets daily.

In original bottles of 50 tablets. Only procurable from the chemist on a physician's prescription.

Literature and trial samples free to members of the medical profession from

H. TROMMSDORFF, chem. works,
AIX-LA-CHAPELLE No. 19.

Agents: CHAS. ZIMMERMANN & CO. (Chemicals), Ltd., St. Mary-at-Hill, LONDON, E.C.

WELL LATHERED IS HALF SHAVED

and **SOLACE** (Reg.), the Antiseptic Solidified Cream Shaving Stick, produces the most luxurious lather in cold just as well as in warm water.

The materials used in its manufacture are the purest and sweetest obtainable; the Antiseptic is Anthrasol, the colourless Coal Tar; the perfume is Olde English Lavender; the lather is of just that flat, silky, clinging texture that lasts and helps the razor.

Each Stick is packed in an aluminium case, the price is 9d., and it lasts for months.

Sole Makers and Proprietors:—

EDWARD COOK & CO., Ltd. (Soap Makers by Appointment to H.M. The King,), BOW, LONDON, E.

THE LANCET.

No. 4718. Vol. CLXXXVI. LONDON, SATURDAY, JANUARY 31, 1914. Pp. 160.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

A LECTURE on Tuberculosis as an Infective Disease. Delivered at the Brompton Hospital for Consumption and Diseases of the Chest, by W. CECIL BOSANQUET, M.D. Oxon., F.R.C.P. Lond., Physician to Brompton Hospital and to the Charing Cross Hospital..... 289

ORIGINAL ARTICLES.

The Present Position of Acute Appendicitis and its Complications. By HUGH LETT, M.B. Vict., F.R.C.S. Eng., Surgeon to the London Hospital, with Charge of Outpatients, &c..... 295

Trauma in Relation to Certain Aspects of Nervous Disease. By C. M. HINDS HOWELL, M.D. Oxon., F.R.C.P. Lond., Physician, Great Northern Central Hospital; Assistant Physician, National Hospital for Paralysed and Epileptic, Queen-square; and Medical Registrar, St. Bartholomew's Hospital..... 302

The Percutaneous Tuberculin Reaction. Observations on 400 Cases. By A. J. BRUCE LECKIE, M.D. Edin., late Resident Medical Officer, Royal Mineral Water Hospital, Bath..... 305

A Case of Post-Operative Osteomyelitis of the Frontal Bone. Recovery after Wide Removal of the Diseased Bone. By W. G. PORTER, M.B., B.Sc. Edin., F.R.C.S. Edin., Surgeon, Ear and Throat Departments, Royal Hospital for Sick Children, and Eye, Ear, and Throat Infirmary, Edinburgh.—(*Illustrated*)..... 306

A Case of Acute Tetanus with Recovery. By V. E. NEGUS, M.R.C.S. Eng., L.R.C.P. Lond., late House Surgeon to King's College Hospital.... 308

Vaccines from the Standpoint of the Physician. By THOMAS J. HORDER, M.D. Lond., F.R.C.P. Lond., Assistant Physician, St. Bartholomew's Hospital.—(*Illustrated*)..... 310

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:
SECTION OF MEDICINE:—Vaccines from the Standpoint of the Physician..... 313
SECTION OF LARYNGOLOGY:—Exhibition of Cases and Specimens..... 314

MEDICAL SOCIETY OF LONDON: Exhibition of Clinical Cases 314

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY:
Renal Retinitis.—Conditions which may Simulate Acute Appendicitis..... 315

EDINBURGH MEDICO-CHIRURGICAL SOCIETY:
Cancer of the Appendix.—Intestinal Toxæmia..... 316

EDINBURGH OBSTETRICAL SOCIETY:
Early Human Ovum.—Biometric Analysis of Insemination-Labour Curves and Menstrual-Labour Curves in Mammalia..... 317

ROYAL ACADEMY OF MEDICINE IN IRELAND:
Exhibition of Cases and Specimens.—Radical Operation for Chronic Osteomyelitis.—Stone and Tumour in the same Kidney..... 318

MEDICO-LEGAL SOCIETY:
The Rational Treatment of Incipient Insanity and the Urgent Need for Legislation.. 319

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY:
Exhibition of Cases, &c..... 319

ROYAL ANTHROPOLOGICAL INSTITUTE:
Reconstruction of Human Fossil Skulls..... 319

LONDON DERMATOLOGICAL SOCIETY:
Exhibition of Clinical Cases... 320

REVIEWS AND NOTICES OF BOOKS.

Studies in Cancer and Allied Subjects. From the Departments of Zoology, Surgery, Clinical Pathology, and Biological Chemistry. Conducted under the George Crocker Research Fund at Columbia University. Vol. III..... 320

Kurzgefasste Lehre von den Knochenbrüchen. Von Dr. F. de Quervain, unter Mitarbeit von Dr. Th. Christen, Dr. H. Iselin, und Dr. H. Zuppinger..... 321

Epidemic Infantile Paralysis (Heine-Medin Disease). By Professor Paul Römer..... 321

The Mutilated Hand and the Workmen's Compensation Act, 1906, having Special Reference to "Missing" Fingers. By J. J. Scanlan, L.R.C.P. & S. Edin., D.P.H.... 322

Treatment of Internal Diseases. By Professor Norbert Ortner. Edited, with additions, by Nathaniel Bowditch Potter, M.D. Second edition..... 322

Treatise on General and Industrial Organic Chemistry. By Dr. Ettore Molinari..... 322

Les Hystérotomies Vaginales en Obstétrique. By Dr. André Wilhelm 323

A Clinical Manual of Mental Diseases. By Francis X. Dercum, M.D., Ph.D..... 323

The Diseases of Children. By Henry Enos Tuley, M.D. Second edition..... 323

Uganda for a Holiday. By Sir Frederick Treves, Bt., G.C.V.O., &c..... 324

War and Women: From Experience in the Balkans and Elsewhere. By Mrs. St. Clair Stobart..... 324

Miscellaneous Volumes..... 325

Surgery, Gynæcology, and Obstetrics 325

British Journal of Inebriety..... 326

British Dental Journal..... 326

NEW INVENTIONS.

Teske's "Standard" Auscultation Set..... 326

LEADING ARTICLES.

CORONERS' INQUESTS ON DEATHS UNDER ANÆSTHETICS..... 327

HOSPITAL STATISTICS AND THE SCIENCE OF MEDICINE..... 328

THE PROTECTION OF INDIA FROM YELLOW FEVER..... 329

ANNOTATIONS.

English Vital Statistics for 1913 330

The Centenary of Claude Bernard..... 330

The Australian Tribesmen..... 331

American Medical Men in Literature..... 331

An Epidemic of "Ship Fever" 332

The Simples and Drugs of India..... 332

"The Isle of Man"..... 333

Fracture Dislocation of Cervical Vertebræ without Injury of the Cord..... 334

Pellagra Investigation..... 334

The Natural Presence of Boric Acid in Foods..... 335

The Action of Sodium Bicarbonate in Shock..... 335

St. George's Hospital..... 336

VITAL STATISTICS:
Health of English Towns..... 342
Health of Scotch Towns 342
Health of Irish Towns 342
Analysis of Sickness and Mortality Statistics in London during December, 1913..... 343
Vital Statistics of London during December, 1913..... 344

SPECIAL ARTICLES.

The Experiences of Captain Scott's Northern Party from a Medical Point of View 336

Medicine and the Law: Dr. Arthur Drury *v.* Officers of the National Antivaccination League.—The Spreading of Scarlet Fever.—Chilley *v.* Bradford.—Misconception of a Hospital's Functions.—The Hopf Trial..... 337

The Annual Report of the Medical Officer of the Local Government Board for 1912-13.—I..... 339

Rescue Apparatus for Use in Poisonous Atmospheres..... 341

The Services..... 344

Medical Practice under the Insurance Act. XXXV.—London: Evidence in Favour of the Act.—(*To be continued*) 346

HOME AND FOREIGN NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Leeds..... 348
Manchester..... 348
Bristol 349
Ireland..... 350
Paris 350
South Africa..... 351

CORRESPONDENCE.

Tuberculosis Dispensaries in London (Dr. B. G. Morison)... 352

The Use of Vaccines in Pneumonia (Dr. William H. Wynn) 353

The Sterilisation of Milk and Allied Questions (Prof. Henry Kenwood, Dr. C. Paget Lapage) 354

Treatment of Gastric and Duodenal Perforation (Mr. Wm. S. Dickie) 355

Research Defence Society (Lord Cromer, Dr. F. M. Sandwith, and Mr. Stephen Paget)..... 356

The Ductless Glands (Prof. Swale Vincent) 356

Dosage and the Metric System (Mr. G. E. M. Johnson)..... 357

A National Medical Service (Mr. Charles A. Parker) 357

The National Insurance Act: the Surplus Funds (Dr. J. M. Twentyman, Miss Janet Ewart St. Clair)..... 357

Chilley *v.* Bradford (Dr. Anthony Bradford)..... 358

A Catalogue of Suffering 358

An Objectionable Solicitation... 363

THE NATIONAL INSURANCE ACT.

Penalties for Arrears of Contributions 359

The Insurance Medical Service in London 359

Institutional Treatment of Tuberculosis in London..... 359

Association of Insurance Committees in Wales 360

Unallotted Funds at Croydon... 360

Chemists' Grievances in Manchester 360

MEDICAL NEWS.

Presentations to a Medical Man 294

Royal Sanitary Institute..... 313

Royal Meteorological Society... 320

Congress of the German Surgical Society 326

Manchester Royal Infirmary ... 330

West African Medical Staff Dinner 341

Roentgen Society..... 345

The Sixth International Congress of Social Work and Service 345

Foreign University Intelligence 347

A Centenarian 351

Deaths of Eminent Foreign Medical Men..... 351

A Coroner who has held 15,000 Inquests 351

Toronto General Hospital..... 360

Pass-lists of the University of Oxford; University of Cambridge; and Society of Apothecaries of London 360

Literary Intelligence..... 360

Medical Barristers..... 360

The Provision for Tuberculosis Treatment in London..... 360

Sanitary Affairs at Ilford 361

A Medical Veteran 361

Books, &c., received 361

Appointments 361

Vacancies 361

Births, Marriages, and Deaths.. 362

Notes, Short Comments, and Answers to Correspondents... 363

Meteorological Readings 363

Medical Diary 364

Acknowledgment of Communications received 366

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

PAGE

ADLARD & SON:—
Fenwick .. Wide Resection of the Bladder .... Cover 1

BAILLIERE, TINDALL & COX:—
Bigg ..... Indigestion, Constipation, Liver Disorder 3
Clarke, E. .. Errors of Accommodation, &c. .. Cover 1
Freyer .... Enlargement of the Prostate 7
" .... Surgical Diseases of the Urinary Organs 7
Gardner .. Surgical Anæsthesia Cover 1
Thorne .... Nauheim Treatment of Diseases of the Heart..... Cover 1

BALE, SONS & DANIELSSON:—
Hawthorne. Studies in Clinical Medicine .... Cover 1

BELL & SONS:—
Bell ..... Cancer 3

CAMBRIDGE UNIVERSITY PRESS:
MacCallan.. Trachoma 59

CASSELL & CO:—
Walker .... Surgical Diseases and Injuries of Genito-Urinary Organs 7

CHURCHILL, J. & A.:—
Aaron ..... Diseases of Stomach.. 3
Andrewes .. Disinfection, &c. 3
Bailey & Miller .... Embryology 3
Berry & Legg .... Hare Lip and Cleft Palate 3
Birnbaum & Blacker .. Malformations and Congenital Diseases of the Fœtus 3

PAGE

CHURCHILL—(Continued).
Box ..... Post-Mortem Manual 3
Coplin .... Manual of Pathology. 3
Cripps .... Cancer of the Rectum 7
" .... Diseases of Rectum.. 7
Cuff ..... Lectures to Nurses .. 3
Cushny .... Pharmacology, &c. .. 3
Eden ..... Midwifery 3
" ..... Gynæcology 3
Fenwick .. The Value of Radiography ..... Cover 1
Fleming.... Practice of Medicine. 3
Hurry ..... Ideals and Organisation of a Medical Society ..... Cover 1
Jellett .... Midwifery for Nurses 3
Minot ..... Embryology 3
White ..... Materia Medica, Pharmacy, Pharmacology, &c..... 3

FROWDE AND HODDER & STOUGHTON:—
McCann .. Cancer of the Womb, &c. ..... Cover 1

HARRISON & SONS:—
Whiteford .. An Operating Theatre in Private Practice Cover 1

LONGMANS, GREEN & CO.:—
Hare ..... Food Factor in Disease ..... Cover 1

MACMILLAN & CO.:—
Adami & McCrae .. Text-Book of Pathology 6
Ballance .. Cerebral Decompression in Ordinary Practice 6
Cook, Sir E. The Life of Florence Nightingale 6

PAGE

MACMILLAN—(Continued).
Hewitt, Sir F. W.. Anæsthetics 6
Luciani .... Human Physiology .. 6
New System of Medicine 6
Paton ..... Nervous & Chemical Regulators of Metabolism 6

MANAGER, LIVERPOOL:—
Rentoul .... Enthetic Diseases Cover 1
" .... Prevention of Venereal Diseases Cover 1

MEDICAL PUBLISHING CO.:—
Lane, Sir W. A.. Operative Treatment of Fractures 8
" Cleft Palate and Hare Lip 8

NISBET & CO.:—
Lane, Sir W. A.. Treatment of Chronic Constipation 8

OPHTHALMOSCOPE PRESS:—
Stephenson. Eye-Strain in Everyday Practice. Cover 1

SAUNDERS COMPANY:—
Fowler .... Operating Room and the Patient 6
Friedenwald & Ruhrah .. Diet 5
Stelwagon .. Diseases of the Skin. 5
Stelwagon's Diseases of the Skin Cover 1

SCIENTIFIC PRESS:—
Stephenson. Ophthalmic Nursing Cover 1

PAGE

THE LANCET:—
Difficulties under the Infectious Diseases (Notification) Act..... 39
THE LANCET and the Hyderabad Commissions on Chloroform 39
The Free Feeding of School Children 39
Water Supply and Sewage Disposal 39

UNIVERSITY OF LONDON PRESS
Bernstein .. Applied Pathology .. 7
Bidwell .... Minor Surgery 7
Biggs ..... Diseases of Ear, &c... 7
Cole ..... Mental Diseases 7
Fox ..... Medical Hydrology .. 7
Marshall .. Diseases of the Eyes.. 7
Stevens .... Diseases of Women .. 7
Turner & Carling .. Treatment after Operation 7

WRIGHT & SONS (BRISTOL):—
Bennett .... Tuberculin .... Cover 1
Mummery .. Diseases of the Colon and their Surgical Treatment .. Cover 1
Smith..... Lateral Spinal Curvature and Flat Foot Cover 1

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering 8
Ketley—Stammering 8
Matthews Bros.—Wood: Application of Trusses 7
Venereal Diseases and Public Health 6

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Administrative County of East Suffolk 66
Administrative County of the Isle of Ely 62
Bagthorpe Institution & Infirmary 70
Barnwood House Hospital for Mental Diseases, Gloucester 69
Birkenhead Borough Hospital 68
Birkenhead Union 68
Birmingham and Midland Eye Hospital 67
Bradford Royal Infirmary 68
Brentford Union Infirmary and Workhouse 72
City of Liverpool Infectious Diseases Hospital 70
City of London Hosp. for Diseases of the Chest 67
City of Sheffield Education Committee 69
Convalescent Hospital, Cheadle .. 70
Corporation of Calcutta 70
County Asylum, Chester 68
County Asylum, Dorchester 68
County Asylum, Shrewsbury 67
County Asylum, Whittingham 72
County Borough of Huddersfield.. 71
County Borough of West Ham 68
Darenth Industrial Colony for the Feeble-Minded 70
Derby County Asylum, Mickleover 66
Dorset County Hosp., Dorchester. 67
Durham County Asylum 67
Durham County Council 71
East London Hos. for Children, Shadwell 72
East Sussex County Asylum, Hellingly 69
Essex County Hosp., Colchester .. 73
French Hospital and Dispensary, Shaftesbury avenue 68
General Infirmary, Leeds 69
Glasgow District Mental Hospital, Lenzie 71
Great Yarmouth Hospital 69
Guest Hospital, Dudley 67
Hampstead General and North-West London Hospital 70
Horton Infirmary, Banbury 66
Hospital for Sick Children 70
Hospital for Sick Children, Newcastle-upon-Tyne 69
Hospital for Women, Soho-square. 69
Joint Counties Asylum, Carmarthen 66
Kensington Dispensary and Children's Hospital 67
Kent County Asylum, Chartham.. 68
Kent County Asylum, Maidstone.. 67
King Edward VII.'s Hospital, Cardiff 69
Lancashire County Asylum, Winwick 72
Limpley Stoke Hydropathic Co. .. 67

APPOINTMENTS—(Continued).
London Homœopathic Hospital .. 69
London Temperance Hospital 68
Manchester Royal Infirmary 70
Metropolitan Borough of Southwark 71
Middlesex Hospital 71
Nottingham General Dispensary.. 68
Paddington Infirmary 67
Perth District Asylum 71
Preston Royal Infirmary 69
Ransom Sanatorium, Mansfield .. 66
Royal Aberdeen Hospital for Sick Children 71
Royal Berkshire Hosp., Reading.. 68
Royal Buckinghamshire Hospital, Aylesbury 70
Royal Gwent Hospital, Newport.. 67
Royal Hampshire County Hosp., Winchester 66
Royal Infirmary, &c., Doncaster .. 69
Royal Infirmary, Sunderland.... 66
Royal Isle of Wight County Hos., Ryde 69
Royal Naval Medical Service..... 71
St. Austell Union and Rural District Council..... 71
St. Bartholomew's Hos., Rochester 71
Scarborough Hospital and Dispensary 66
South Devon and East Cornwall Hospital, Plymouth..... 68
Straits Settlements Government.. 67
Swansea General and Eye Hospital 68
Tadcaster, Goole, Riccall, & Selby Rural Districts, &c..... 68
Tooting Bec Asylum 71
Township of Manchester Workhouse, Crumpsall 70
Victoria Hospital, Burnley 67
Warwick County Asylum 68
West Bromwich and District Hospital 67
West Ham and Eastern Gen. Hos. 69
York County Hospital 69

ASSISTANCIES, MEDICAL..... 72

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford .. 59
Barnsley Hall, Bromsgrove..... 59
Barnwood House Hospital 60
Bishopstone House, Bedford..... 59
Bootham Park, York 59
Broadlands, Medstead 66
Brunton House, Lancaster 66
Buntingford House Retreat, Buntingford 62
Camberwell House, Peckham-road 61
Cheadle Royal..... 60
City of London Mental Hospital, Stone..... 66
Clarence Lodge, Clapham-park .. 59
Colthurst House, Alderley Edge .. 64
Coppice, The, Nottingham 60

ASYLUMS—(Continued).
Dalrymple House, Rickmansworth 62
Dartmoor Sanatorium 65
David Lewis Colony, Alderley Edge 65
Duff House, Banff 63
Elliot, Southwell 66
Ghyllwoods 62
Grove House, Church Stretton 60
Grove, The, Catton, Norwich..... 60
Harbrook Lodge, Newton-le-Willows 61
Haynes, Brentwood 66
Heigham Hall, Norwich 59
Holmesdale, Hastings 66
Home for Epileptics, Maghull 64
Invernith Sanatorium, Colinsburgh 61
London Fever Hospital..... 60
Maison de Santé de Glain-lez-Liége (Belgium) 65
Malling Place, Kent 60
Manna Mead, Blackheath 65
Melbourne House, Leicester 65
Mendip Hills Sanatorium 64
Meyrick, Brighton 68
Middleton Hall, Co. Durham..... 59
Moat House, Tamworth 60
Mount Vernon Hospital for Consumption 63
Newmains Retreat, Lanarkshire.. 62
Nordrach-on-Dee, Banchory 63
Northumberland House, Finsbury-park 59
Northwoods House, Winterbourne 61
Norton House, Clapham Park 65
Norwood Sanatorium, Ltd..... 62
No. 750, L.O., Strand 66
No. 752, L.O., Strand 66
Oses Island, Heybridge..... 62
Peckham House..... 61
Pendyffryn Hall Sanatorium, Nordrach-in-Wales 62
Plympton House, Plympton 60
Portsmouth Corporation Mental Hospital 59
Rona Electrical and Medical Nursing Home 66
Ruebury Sanatorium, Northallerton 64
St. Andrew's Hospital, Dollis Hill 66
St. Andrew's Hosp., Northampton 60
St. Luke's Hospital for Mental Diseases 59
Shaftesbury House, Formby-by-the-Sea 61
Springfield House Private Asylum, Bedford 60
Stocker, Craven-street 66
Stretton House, Church Stretton.. 60
The Grange, near Rotherham 59
Vale of Clwyd Sanatorium 63
Warneford Asylum, Oxford..... 59
Wye House, Buxton..... 60
Yarrow Convalescent Home, Broadstairs 61
Zander Institute 66

COMPANIONS:—
Spear, Crawford-street 72

FINANCIAL, &c.:—
Equitable Reversionary Interest Society.. 57

HEALTH RESORTS, BATHS, &c.:—
Harrogate Hydropathic Establishment 64
Leysin, Switzerland..... 65
Peebles Hotel Hydropathic 64
Smedley's, Matlock 64

HOMES WANTED:—
No. 761, L.O., Strand 66

HOTELS:—
Hotel de la Reine, Ospedaletti 65
Hotel Windsor 64
Knowle Hotel, Sidmouth 64

HOUSE & ESTATE AGENTS:—
Box 932, Fleet-street..... 74
Clark & Son, New Cavendish-street 74
Farmer & Sons, Gresham-street .. 74
Holmes & Sons, Paternoster-row.. 74
Jones, Acton 74
Leigham Court Estate Office, Streatham Hill 74
Lay Clark, Wimpole-street 74
No. 748, L.O., Strand 74
Single, Stratford 74

LIFE & FIRE ASSURANCES, &c.:—
Prudential..... 57

MASSAGE:—
London School of Massage 59

MEDICAL ACCOUNTANTS, &c.:—
Turner..... 75

MEDICAL AGENTS:—
Fieldhall, Limited..... 78
Manchester Clerical, &c., Assoc... 76
Medical Agency 76
Moore & Co. 72
Needes, Herbert..... 74
Needes, J. C. 76
Peacock & Hadley..... 78
Scholastic, Clerical, &c., Association..... 75
Turner 76

MEDICAL SCHOOLS:—
(LONDON.)
London School of Clinical Medicine 55
West London Post-Graduate Coll.. 55

For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.

J. & A. CHURCHILL

NOW READY. THIRTEENTH EDITION. 6s. 6d. net.

NEW EDITION OF HALE WHITE'S
Materia Medica, Pharmacy, Pharmacology, and Therapeutics

NEW (4th) EDITION. 6 Coloured Plates and 169 other Illustrations. 7s. 6d. net.

JELLETT'S MIDWIFERY FOR NURSES
With Glossary, C.M.B. Regulations, and Chapter on Cancer.

By **HENRY JELLETT**, M.D., Master of the Rotunda Hospital, Dublin.

NEW (6th) EDITION. With 29 Illustrations. 3s. 6d. net. Postage 4d.

LECTURES ON MEDICINE TO NURSES
By **HERBERT E. CUFF**, M.D., F.R.C.S., late Medical Superintendent, North Eastern Fever Hospital.

By T. W. EDEN, M.D.,
C.M.Edin., F.R.C.P.Lond.,
Obstetric Physician and Lecturer on Practical Midwifery, Charing Cross Hospital.

A MANUAL OF MIDWIFERY
Third Edition. 339 Text-figures. 15s. net.

A MANUAL OF GYNÆCOLOGY
271 Text-figures. 18s. net.

THE LANCET says:—"*By far the best Manual of Gynæcology of its size which has yet been written.*"

242 Illustrations. **With Appendix of Cases of Operation for Cleft Palate.** 12s. 6d. net.

HARE-LIP AND CLEFT PALATE
With Special Reference to the Operative Treatment and its Results.

By **JAMES BERRY**, B.S.(Lond.), F.R.C.S., Senior Surgeon to the Royal Free Hospital, London; Consulting Surgeon to the Alexandra Hospital for Children with Hip Disease; and **T. PERCY LEGG**, M.S.(Lond.), F.R.C.S., Surgeon to the Royal Free Hospital, London; Assistant Surgeon to King's College Hospital.

"*This book is a model of what a surgical monograph should be.*"—ANNALS OF SURGERY.
"*The work is very complete.*"—THE LANCET.
"*This is an altogether admirable monograph. It is commendable for its clearness, for its ample details, and for its wealth of illustrations.*"—THE BRITISH MEDICAL JOURNAL.

SECOND EDITION. 55 Illustrations. 12s. 6d. net.

FLEMING'S PRACTICE OF MEDICINE
By **ROBERT A. FLEMING**, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on the Practice of Medicine, School of the Royal Colleges, Edinburgh.

FIFTH EDITION. 12 Plates (11 in colours), 612 Text-figures. 21s. net.

A MANUAL OF PATHOLOGY.
Including Bacteriology, the Technic of Post mortems, and Methods of Pathologic Research.

By W. M. **LATE COPLIN**, M.D., Professor of Pathology, Jefferson Medical College, Philadelphia.

SECOND EDITION. 31 Illustrations. 3s. 6d. net.

DISINFECTION, STERILISATION, AND BACTERIOLOGY.
By F. W. **ANDREWES**, M.D., F.R.C.P., Lecturer on Pathology, St. Bartholomew's Hospital, London.

Illustrated. 6s. net.

POST-MORTEM MANUAL.
Handbook of Morbid Anatomy and Post-Mortem Technique.

By C. R. **BOX**, M.D., F.R.C.P., Physician to Out-Patients, St. Thomas's Hospital.

With 21 Plates and 42 Text-figures. 21s. net.

DISEASES OF THE STOMACH:
With Special Reference to Treatment.

By **CHARLES D. AARON**, Sc.D., M.D., Professor of Gastro-enterology and Adjunct Professor of Dietetics in the Detroit College of Medicine.

FIFTH EDITION. 61 Illustrations. 15s. net.

PHARMACOLOGY AND THERAPEUTICS,
Or the Action of Drugs in Health and Disease.

By **ARTHUR R. CUSHNY**, M.D., F.R.S., Professor of Pharmacology in the University of London.

BOOKS ON EMBRYOLOGY.

With 8 Plates and 58 Illustrations in the Text. 15s. net.
A CLINICAL MANUAL of the MALFORMATIONS and CONGENITAL

DISEASES OF THE FŒTUS.
By **Prof. Dr. R. BIRNBAUM**, Chief Physician to the University Clinic for Women at Göttingen.
Translated and Annotated by G. BLACKER, M.D., B.S., F.R.C.P., F.R.C.S., Obstetric Physician to University College Hospital.

SECOND EDITION. With 515 Illustrations. 21s. net.

BAILEY & MILLER'S

TEXT-BOOK OF EMBRYOLOGY.
By **F. R. BAILEY**, A.M., M.D., and **A. M. MILLER**, A.M., Instructor in Anatomy, College of Physicians and Surgeons, Medical Department of Columbia University.

SECOND EDITION. With 262 Illustrations. 16s. net.

A LABORATORY

TEXT-BOOK OF EMBRYOLOGY.
By **C. S. MINOT**, LL.D. (Yale & Toronto), D.Sc. (Oxford), Prof. of Comp. Anat. in Harvard Med. School.

London: 7, Great Marlborough Street.

INDEX—(CONTINUED).

NURSING INSTITUTES:— PAGE
Co-operation of Temperance Male and Female Nurses ... 58
General Nursing Association ... 58
Hospital for Sick Children, Great Ormond-street ... 58
Leeds Trained Nurses' Institution 59
London Nurses' Association ... 59
London Temperance Male and Female Nurses Co-operation ... 58
Male Nurses Temperance Co-operation ... 57
Mental Nurses' Co-operation ... 58
Nurses' Co-operation, Portland pl. 59
St. John's House ... 59
St. Luke's Hospital ... 58

NURSING INST.—(Continued). PAGE
Temperance Association of Male Nurses, Ltd. ... 57
Temperance Association of National Hospital Trained Male Nurses and Masseurs ... 58
Temperance Male Nurses Co-operation ... 58
Temperance Male and Female Nurses Co-operation ... 58
The Retreat, York ... 59

OFFICIAL NOTICES:—
Cancer Hospital, Fulham-road ... 55
Central London Throat, Nose and Ear Hospital ... 55

OFFICIAL NOTICES—(Continued). PAGE
City of London Lying-in Hospital 55
Hospital for Sick Children ... 56
Lady Margaret Hospital ... 56
London Hospital ... 56
London School of Tropical Medicine ... 55
North-East London Post-Graduate College ... 55
Queen Charlotte's Lying-in Hos. 55
Royal Society of Medicine .. Cover i
St. Mary's Hospital Medical School 56
West End Hospital for Diseases of Nervous System ... 56
York-road General Lying-in Hospital, Lambeth ... 55

PARTNERSHIPS & PRACTICES 75

RAILWAY & STEAMSHIP CO.'S:—
Anchor Line—
Winter Tours in Sunny Lands. 57
New Zealand Shipping Co. ... 57

SCHOOLS, PREPARATORY, &c.:—
Agricultural College, Aspatria ... 56

TUTORS & LECTURERS:—
Beckton ... 56
Gemmell ... 56
Med. Corres. College ... 57
No. 449, L.O. ... 74
No. 647, L.O. ... 72
No. 198, L.O. ... 56
Schnelle ... 9
Weymouth ... 85

TRADE AND MISCELLANEOUS ADVERTISEMENTS

AMBULANCES:—
St. John Ambulance—
Invalid Carriages ... 11

BOTTLE MERCHANTS:—
Isaacs ... 52

CARRIAGES, MOTORS, &c.:—
Armstrong—
Coachmen's, Grooms', and Chauffeurs' Liveries ... 11
Atlas Empty-Quick Syndicate, Ltd.—
Atlas "Empty-Quick" Petrol Filler and Filter ... 10
Dunlop Rubber Co., Ltd.—
Dunlop Tyres ... 11
Morgan & Co.—
Morgan Adler Carette ... 11
Cabric-Landaulette ... 11

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Azoule Solutions ... 32
Hypocol Solutions ... 32
Byno Hypophosphites ... 33
Castor Oil ... 47
Angier Chemical Co.—
Angier's Emulsion ... 28
Armbrecht, Nelson & Co.—
Radium Water ... 18
Bayer Co., Ltd., and E. Merck—
Luminol ... 16
Luminol-Sodium ... 16
Veronal-Sodium ... 16
Bishop, Ltd.—
Hydropyrin ... 45
British Drug Houses, Ltd.—
Herogen ... Cover iii
British Oxygen Co.—
Oxygen ... 47
Bullock & Co.—
Pepsina Porci ... 47
Acid Glycerine of Pepsine ... 47
Burroughs Wellcome & Co.—
Dartring Lanoline Products ... 56
Soloid Brand Antiseptics ... 58
Tuberculin Dilutions ... 57
Carnrick (G. W.) Co.—
Trypsogen ... Cover iv
Secretogen ... " iv
Kinazyme ... " iv
Hormotone ... " iv
Carnrick & Co.—
Liquid Peptonoids ... 35
Christy & Co.—
Glyco-Thymoline ... 22
Glyco-Heroin ... 49
Clay, Paget & Co.—
Glycolactophes ... 18
Cook & Co.—
Solace Shaving Soap .. Cover ii
Duncan, Flockhart & Co.—
Pure Chloroform ... 21
Ecsolent Compounds, Ltd.—
Ecsolent Compound ... 27
" Powder ... 27
" Soap ... 27
Evans Sons Lescher & Webb—
Capsul. Ol. Santal. Flav. ... 23
Anti-Diphtheritic Serum ... 25
Hypotubes ... 25
Algiron ... 25
Fellows—
Syrupus Hypophosphitum ... Cover iii

CHEMISTS—(Continued).
Fletcher, Fletcher & Co.—
Bronamalt ... 29
Gale & Co., Ltd.—
Elixir Cresolis c. Heroin Co. .. 49
" Prunl Sedat. ... 49
Linctus Tussi ... 49
Syrup. Creosoti Lactophosph. Co. ... 49
Grant—
Veronidia ... 48
Grillon—
Tamar Indien Grillon ... 50
Hewlett & Son—
Mist. Pepsinæ Co. c. Bismuthe 48
Hogg & Son—
Protein Nerve Food ... 51
Hudson's Eumenthol Chemical Co.—
Eumenthol Jujubes ... 48
Humphrey Taylor & Co.—
Junora ... 24
Lecithin-Ovo ... 24
Kutnow & Co.—
Kutnow's Powder ... 25
Maltine Manufacturing Co.—
Maltine with Cod Liver Oil ... 35
Merck—
Chinconal ... 78
Luminal ... 78
Veronal ... 78
Parke, Davis & Co.—
Syrup Cocillana Compound .. 34
Raimes & Co.—
Slinger's Nutrient Suppositories ... 52
Saccharin Corporation, Ltd.—
Diamalt ... 45
Novocain ... 46
Trivalin ... 45
Tulloch's Alloys ... 45
Saccharin ... 45
Tidman's Sea Salt ... 47
Trommsdorff—
Sozojodol-Sodium ... Cover ii
Merfodin ... " ii
Viel's Electric Colloids Co.—
Colloidal Iodine ... 40
Delta Syringe ... 40
Waterbury Chemical Company—
Cod Liver Oil Compound ... 48
Pinozyme ... 48
Willows, Francis, Butler & Thompson, Ltd.—
Mackey's Glyceroles ... 42
Zimmermann, A. & M.—
Atophan ... 45
Spermineum Poehl ... 36
Pellidol ... 47

DISINFECTANTS:—
Allen & Hanburys
Medical Inal ... 31
Condy's Fluid ... 46
Quibell Bros., Ltd.—
Kerol ... 49
" Capsules ... 49
Zimmermann & Co.—
Lysol ... 48

ENGRAVERS (NAME PLATES) &c.—
Cooke & Co.—
Brass Name Plates and Lamps 52
Osborne & Co.—
Brass Door Plates ... 10

FOODS:—
Aylesbury Dairy Co.—
Humanized Milk ... 51
Benger's Food, Ltd.—
Benger's Food ... 30
Blatchley's Diabetic Preparations 51
Lifebelt Coffee Co., Ltd.—
Finest Pure Coffee ... 50
Manhu Food Co.—
Manhu Diabetic Foods ... 52
Mellin's Food, Ltd.—
Mellin's Food ... 44
" " Biscuits ... 44
" Lacto ... 44
Nestlé's Milk ... 30
Peter's Swiss Milk Chocolate ... 28
Valentine's Meat Juice Co.—
Meat Juice ... 78
Van Abbot & Sons—
Foods for Diabetics and Obesity 50

FURNITURE, &c.:—
Carter—
New Rising Seat Commode ... 12

MED. & SURG. APPLIANCES:—
Bailey & Son—
Patent Belts, Trusses, and Elastic Stockings ... 41
Consulting Room Couches ... 41
Personal Weighing Machine .. 41
Cocking—
Adaptable Poro Plastic Jackets and Splints ... 54
Davis—
Lukens Sterile Catgut ... 9
Down Bros., Ltd.—
New Ether Inhaler ... 13
Instrument for Reducing Overlapping Fractures ... 13
Rotary Blower ... 15
Etherisation Apparatus ... 15
Galen Mnfg. Co.—
"Electric-White" Plaster ... 53
Hawksley & Sons—
Rotary Hæmoglobinometer ... 53
Holland & Son—
Patent Instep Supports ... 53
Millikin & Lawley—
Osteology, &c. ... 53
Noelle—Dr. Dettweiler's Spitting Flasks ... 10
Robinson & Sons—
Capsicum Gamgee Tissue ... 51
Timpson & Co.—
Reliable Ligatures ... 10
Wormull—
Aluminium Splinting ... 10

MINERAL WATERS:—
Apollinaris Co.—
Apollinaris ... 42
Camwal, Ltd.—
Aerated Lithia Water ... 50
Davis—Hercules Water ... 50
Evian-Cachat Agency—
Evian-Cachat Water ... 19
Ingram & Royle—
Giesshübler Mineral Water ... 14
Royal Fachingen Natural Mineral Waters ... 51
Rubinat-Llorach ... 45

MUSICAL INSTRUMENTS:—
Marshall—
Angelus Player-Pianos ... 10

OPTICIANS:—
Bruce, Green & Co.—
Reliable Lens Measures ... 39
The Wyche Portable Lamp, &c. 39

SANITARY APPLIANCES, &c.:—
Aymard Patent Milk Steriliser Co.—
Aymard Milk Steriliser ... 53

STATIONERY, &c.:—
Burge, Warren & Ridgley—
The "Compacto" Stylo ... 52
Mabie, Todd & Co.—
Swan Fountpens ... 52

TAILORS, BOOTMAKERS, &c.:—
Burberrys Half Price Sale ... 52
Dowie & Marshall—
Hygienic Bootmakers ... 10
Evans & Co.—
The Regent 1914 Models ... 39
Holden Brothers—
Natureform Boots, &c. ... 9
Miller—
Dress Suit, &c. ... 9

TOBACCO, CIGARS, &c.:—
Ardath Tobacco Co., Ltd.—
State Express Cigarettes ... 15
Player & Sons—
Perfectos Cigarettes ... 44

TYPEWRITING, &c.:—
Taylor's Typewriters ... 12

VACCINE LYMPH:—
Dr. Pondorf's Dry Vaccine ... 9
Jenner Institute for Calf Lymph. 9
Renner's Calf Lymph Establishment ... 9
Roberts & Co.—
Chaumier's Calf Lymph ... 9

WINES, BEER, SPIRITS, &c.:—
Ackerman Laurance—
Brut-Royal ... 51
Dunville's Irish Whisky ... 14
Finsbury Distillery Co.—
Wolfe's Schnapps ... 44
Gilbey's Invalid Port ... 17
Humphrey Taylor & Co.—
"G.B." Diabetes Whisky ... 24

X-RAY, &c., APPARATUS:—
Sanitas Electrical Co.—
The Penetrotherm ... 15

MISCELLANEOUS:—
Francis, Barnes—
Medical Typewriting ... 75
Mazda Drawn Wire Electric Lamps 12

EVERY FRIDAY. **THE LANCET** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith & Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other advertising Agents.

ADVERTISING.

Books and Publications	Five Lines and under £0 4 0
Official and General Announcements	
Trade and Miscellaneous Advertisements and Situations Vacant ...	Every additional Line 0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £3 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Special terms for Position Pages

OFFICES: 423 and 424 STRAND, LONDON, W.C., and 1, 2, and 3, BEDFORD STREET Adjoining.

A Lecture
ON
TUBERCULOSIS AS AN INFECTIVE DISEASE.

Delivered at the Brompton Hospital for Consumption and Diseases of the Chest,

BY W. CECIL BOSANQUET, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO BROMPTON HOSPITAL AND TO THE CHARING CROSS HOSPITAL.

GENTLEMEN,—In considering the question of tuberculosis as an infective disease it may be well to start by defining the latter term, as it may possibly convey a meaning other than that which it should strictly bear.

DEFINITION OF INFECTIVE DISEASE.

An *infective* disease is one which is produced by the entrance into the body of a living organism, animal or vegetable, which then multiplies in the blood or tissues and causes injurious effects. This is not quite the same as an *infectious* disease in the popular sense, which implies one which is directly conveyed from one person to another by contact or association. For example, malaria is an infective disease, due to the action of the well-known plasmodium, but it is not infectious, inasmuch as it can only be conveyed from one individual to another by means of the mosquito, a definite cycle of changes in the parasite taking place within the body of the insect. Sleeping sickness is also an infective, but not an infectious, disease, and others are yellow fever and tick fever. Consequently, when we say that tuberculosis is an infective disease we must not immediately assume that it is directly passed from man to man, though this may be the case. Indeed, this is a point on which opinion has varied from time to time, since it is clear that in the Middle Ages phthisis or tuberculosis of the lungs was looked upon as an infectious disease, but this view was gradually abandoned, to be revived later by Budd, Villemin, and others. At the present time the danger of direct infection seems to have been so impressed on the public by a certain school of writers on sanitary matters that there is danger of sufferers being treated as lepers and shunned as unclean and dangerous, whereas it is fairly clear that the risk of direct communication of tuberculosis is at any rate minimal under good sanitary conditions.

The discovery of the bacillus tuberculosis by Koch in 1882 put the infective nature of the disease on an assured footing, and it might be supposed that now, 30 years afterwards, exact knowledge would be possessed as to the path of infection and the conditions necessary for its occurrence. As a matter of fact, this is not the case, and in view of the common nature of the affection it is really surprising how many serious gaps exist in our knowledge concerning it.

THE BACILLUS TUBERCULOSIS.

We may first consider what is known of the bacillus and its life conditions, and see what light is thus thrown on the problem of its infective nature. The well-known acid-fast rods encountered in tuberculous lesions grow slowly on laboratory media and are not very resistant to hostile influences, being readily destroyed by sunlight and even by ordinary diffused light and drying. It is generally held that the organism does not form spores, though some writers speak of the granular forms of the bacillus, which are formed by breaking up of the rods, as spores. Besides these—the "granules of Much"—some writers have described a form of the bacillus which does not retain the carbol-fuchsine when treated with acid—a view which would introduce considerable confusion into our accepted ideas if it were generally adopted. The B. tuberculosis is only one of a group of organisms which have this peculiar property of resisting decoloration by acids, owing to the presence of a fatty or waxy coat. The relationships between the members of the group are another subject on which doubt continues to exist. Diseases caused by acid-fast organisms are found in cattle, birds, and cold-blooded animals as well as in human tuberculosis, and the controversy as to the essential unity or diversity of the organisms respectively present is as yet unsettled.

THE BOVINE VARIETY OF BACILLUS.

The important question so far as human infection is concerned is as to the ability of the organism found in cattle to establish itself in man, as it is fairly certain that the avian and reptilian varieties do not constitute a practical source of danger. On the answer to this question depends our recognition of a very important source of infection, and the absence of certainty on this point constitutes, perhaps, one of the most serious of all the gaps in our knowledge of the disease. Tuberculosis is very common among cattle, and the bacilli are often present in the milk; hence, if infection can be conveyed to mankind by their means it is possible that a large proportion of human tuberculosis is due to consumption of the milk of tuberculous cattle. Consequently, a large amount of attention has been devoted to the feasibility of infection from bovine sources.

Direct experiment as to transmission of bovine bacilli to man is, of course, impossible, and we are compelled to rely on evidence as to the strain of organisms found in human patients and as to the probable point of entry into the body. Identification of the bovine variety or species depends partly on its morphological and cultural characteristics, and partly on its effect when injected into rabbits in which it produces rapid general tuberculosis, whereas the human form causes only a chronic lesion. This method of examination presumes that the bovine bacilli remain constant in form and virulence when transferred to another host, and it is noteworthy that Eber[1] states that he has been successful in causing alteration both in form and virulence by passing human bacilli through guinea-pigs and then inoculating cattle; in these latter animals infection resulted, and the organisms were found to have assumed the bovine character. If this be confirmed it is likely that bovine bacilli in human beings may revert to or develop into the human type. The British Commission,[2] however, maintains that the several varieties are practically stable, and this is the view of the majority of observers at the present time.

As to the liability of children to become infected with bacilli from a bovine source the Commissioners speak very definitely. There is, they say, "no doubt that a considerable proportion of the tuberculosis affecting children is of bovine origin," or that "primary abdominal tuberculosis, as well as tuberculosis of the cervical glands, is commonly due to ingestion of tuberculous infective material." Again, the potency of tuberculous cow's milk in causing the disease is, in their view, "clearly

demonstrated." Their investigations showed that in young children about half the cases of abdominal tubercle were due to bovine bacilli, while in adults 5 out of 55 cases were similarly produced. Other observers find a much smaller proportion of bovine cases; for example, Besche,[5] who gives a percentage of 7–8 in children, and Dammann and Rabinovitch[4] who found 29 per cent. in tuberculous children, and 11·7 per cent. in all cases taken together. On the other hand, Mitchell[3] found that 90 per cent. of glandular tuberculosis in Edinburgh children was caused by bovine infection.

There is general agreement that the bovine type is rare in pulmonary tuberculosis in adults, the commonest form of the disease (69 per cent.), while there is no correspondence between the amount of human tuberculosis and the percentage of infected cattle in different parts of the world. Hence on the evidence available, and assuming that the types of the bacillus remain constant—perhaps a large assumption—we are driven to conclude that infection by tuberculous milk or meat explains only a small proportion of all cases of tuberculous disease.

MODE OF TRANSMISSION OF INFECTION.

It appears, then, that infection is somehow conveyed from one human case to another in the great majority of instances, and it is necessary to consider what is the probable mode of such transmission. We have unfortunately to admit that we have little more than guesswork on which to base our conclusions. We know that the bacilli are contained in all discharges from tuberculous lesions, and that as tuberculosis of the lungs is by far the most frequent form of the affection, the sputum of consumptive patients is the most obvious vehicle for the dissemination of the germs. Not only the actual sputum, but the minute droplets of saliva expelled in the act of coughing are charged with bacilli and capable of conveying infection. Here actual knowledge ends.

It is naturally assumed that the organisms are disseminated by the air, as the sputum dries, and that they are then inhaled into the lungs of a sound individual and set up pulmonary tuberculosis afresh. The great frequency of pulmonary as compared with other localisations of the disease is used to support this view of the spread of infection, the organisms being supposed to reach the air passages or even the alveoli directly and to give rise to the disease at the points where they settle; the apex of the lung being most often attacked first, because of some anatomical or physiological peculiarity which enables the germs to gain a footing here and to resist expulsion by ciliary action or coughing. We must examine the facts so far ascertained as to tuberculous infection, natural and experimental, and see how far they fit in with this explanation.

Infection of Lungs by Various Routes.

In passing we may note that the mere fact of the common localisation of the disease in the lung does not necessarily indicate that the air passages are the route by which infection has entered. Thus, Dieterlen[6] found that bacteria injected per rectum into animals were rapidly distributed throughout the whole alimentary canal by some process of reversed peristalsis, and that they were recognisable within a short space of time in the air passages as well.

Again, some interesting experiments were performed by Bacmeister[7] to investigate the influence of anatomical narrowing of the thoracic aperture in producing localisation of tuberculous infection in the lungs. He applied loops of wire round the upper part of the thorax in young rabbits, so that as they grew a ring of constriction was produced. He then injected tubercle bacilli intravenously and found that lesions were produced in the neighbourhood of the constriction closely resembling in distribution those of human pulmonary tuberculosis. He could not, however, produce this result by causing the animals to inhale the organisms—only by the vascular route.

Still, there are numerous experiments recorded which prove the possibility of infecting animals by inhalation of bacilli, and it is stated that a smaller dose of organisms will produce disease when administered by this route than when given by the mouth. Probably the lungs are the most favourable tissue for their growth in the body, as observations by von Behring and Neufeld,[7] Orth, and others show that in animals immunised by previous injection of small quantities of bacilli of a foreign type (human or reptilian) subsequent injection of a large dose of organisms results in disease localised in the lungs without general infection. Hara[8] found that guinea-pigs could be infected by inhalation of bacilli when they were kept in cages, but that in the open air no infection resulted—a point of interest in relation to the question of tuberculosis as a "house infection." He also found that in his experiments a generalised blood-borne infection was induced, not a direct inhalation tuberculosis of the lungs.

The Question of Direct Infection.

To return to the problem of human disease. In the first place, it is pretty clear that tuberculosis is not usually conveyed by immediate infection, as is, for example, measles or diphtheria. Owing to the slow development of the bacilli we could not, indeed, expect to find instances in which tuberculosis was set up by a single act of inoculation, as by a patient coughing in the face of a healthy person; but study of large numbers of consumptives shows that in only a minority of cases can any direct contact with a tuberculous subject be ascertained. Dr. F. C. Shrubsall[9] found among 1149 patients at this hospital only 321 who could recollect any probable source of infection—not much over a quarter of the number—and, of course, it is not certain that infection did result in any one of these instances from the particular case of tuberculosis with which they were brought into contact.

Then if infection were usually direct, we should expect to find nurses and medical men in establishments for the treatment of the disease frequently falling victims to consumption, and possibly an increased number of cases in the neighbourhood of institutions for the treatment of the disease, as occurs around small-pox hospitals. As to the first possibility Dr. Theodore Williams's investigations into the *personnel* of this hospital over a number of years failed to reveal any instances of infection among the resident staff and nurses, and Freymuth[10] states that there is no single authenticated instance of infection of a healthy person in a sanatorium. The question of increased development of tuberculosis in the neighbourhood of a sanatorium, which is popularly believed to occur, was investigated by Werner[11] in the case of one locality and answered definitely in the negative; while medical men who are necessarily brought into contact with consumptive persons show, as a profession, a low rate of mortality from tuberculosis.

On the other hand, Professor Karl Pearson, a great statistical authority, finds a sensible but slight liability to transference of the disease from husband to wife and *vice versâ*—the relationship involving the most close and prolonged form of association and contact; while from time to time one meets with instances in one's own experience in which a daughter who has nursed her consumptive mother or some one else who has been constantly in contact with a tuberculous patient contracts the disease, apparently by direct transference. These are, however, exceptional, and it would seem that for such an occurrence to be possible either a very large dose of bacilli is needed, or there must be opportunities by repeated infection for the organisms at some time or other to gain a footing when the resistance of the individual is temporarily lowered by some injurious influence.

The Evidence derived from Necropsies.

Attempts have been made in different ways to estimate the degree of infection with tuberculosis which actually takes place, and the results obtained are striking. By careful post-mortem examination Nägeli found signs of active or obsolete tubercle in 90 per cent. of the bodies examined at Zürich, and similar observations by others in other places have shown very high, though lower, rates of incidence. These figures relate to visible signs of tuberculous disease—that is to say, to anatomical changes produced by the establishment of the germs in the body—whereas it must be supposed that a few bacilli might enter and be almost immediately destroyed without setting up organic changes.

Hence, it would seem that in civilised countries almost everyone must at some time or other be brought into contact with tubercle bacilli. And this infection seems to occur in early life, for examination of children of different ages by means of the cutaneous tuberculin test elicits a positive reaction in the great majority of instances. Thus, Calmette[13] and his colleagues found that in the first year of life 8·7 per cent. of infants reacted positively; of children from the second to the fifth year 53 per cent.; from the fifth to the fifteenth year 81 per cent.; and over 15 no less than 87·7 per cent. Others do not give quite such high figures, but all find that a very large number of children show signs of infection. Thus, not only is the infective agent widely distributed, but it takes only a few years for most individuals to encounter the enemy. Clearly all these infected children are not directly inoculated by contact with a sufferer from consumption.

The Influence of Environment.

We find further that the disease is distributed practically all over the world. It is rarer at high altitudes and high latitudes—that is to say, in parts which are scantily inhabited. It has also been found to increase in many countries concomitantly with a concentration of the people in towns; it appears to accompany density of population and the conditions of town life. Thus, the natives in the Cameroons do not suffer much from consumption, but in Cape Colony, where Europeans have settled longer, where there are more towns and where the natives come more in contact with civilisation, there is a good deal of infection among them. A similar state of things can be made out in Egypt in the case of the fellaheen and Bedouins.

The Registrar-General's reports in this country show that the death-rate from tuberculosis is much higher in the towns than in the country districts This association of the disease with town life, to which I shall have to return again later, may be connected with the general deterioration of health and resistance to infection which seems to go with town conditions, or simply with the greater opportunities of infection which such congregation of human beings creates. But in view of the facts noted as to the comparatively poor powers of resistance possessed by the bacilli against the influence of open air and sunlight, we have to consider the conditions of towns in another respect—the aspect of tuberculosis as a "house infection."

It is clear that while open-air conditions are unfavourable to the bacilli they have many opportunities of surviving within our houses, where they can lurk in dark corners and exist for long periods if undisturbed. The worse the ventilation and the dirtier the conditions prevailing, the better the chance for the organisms. Further, within a house or room the infective material is concentrated and a larger dose is available for conveying the infection as compared with distribution in the open air. The most favourable conditions which we can imagine for such direct conveyance of infection are presented by a bedridden consumptive in the last stages of the disease, too weak to be able to exercise due care in the disposal of his sputum, teeming as it is with bacilli, which therefore get scattered over bedclothes and furniture; lying in a dark, ill-ventilated room, from which dust and dirt are insufficiently removed; with children playing about and crawling on the floor, getting their fingers contaminated with germs, and conveying these to their mouths as children will.

That in such circumstances infection does occur is hardly open to doubt, and it is possible that the taint may cling to a house for some time after the infecting person has been removed or died. On the other hand, if the patient is careful in his habits and lives in good surroundings, with plenty of air and sunlight, as in hospital or in well-to-do homes, the bacilli get little chance to do evil, and, as we have already noted, infection of others is practically unknown.

Congenital Infection: Inoculation through the Skin.

Before leaving the question of the mode of infection in tuberculosis it is necessary to refer to two other possible routes—viz., congenital infection and inoculation through the skin. It has been usual of recent years to attach little or no practical importance to the possibility of congenital infection, the probability that a bacillus can be actually conveyed in the head of a spermatozoon being very small, and the chances of its lurking in the ovum being also slender. The occurrence of infection during intra-uterine life is, however, experimentally proved, the bacilli passing from the maternal circulation into the body of the fœtus, while even transmission by the father is apparently possible. In this connexion I was told by Dr. A. C. Inman of a striking case in cattle. Two healthy pedigree cows were served by the same bull, and both had calves which were found to be tuberculous. The bull was then examined and found to be suffering from the disease, so that a strong probability of congenital paternal infection was created. It is to be hoped that breeders of cattle will pay attention to this point and endeavour to clear up the matter.

The question of inoculation of tuberculosis through the skin is one with which I had occasion to deal in a previous lecture at this hospital. Instances are reported in which veterinary surgeons

and butchers have directly infected themselves in the dissection of tuberculous cattle, the resulting local lesion and lymphangitis leading in some instances to a generalised condition, terminating in pulmonary tuberculosis.

CAUSE OF DISEASE IN LATER LIFE.

Having arrived at the conclusion that infection with tuberculosis is very widespread, and that it takes place with great frequency in early childhood, we are met by the question as to the cause of the outbreak of the disease at later periods of life; for it need not be said that of the children who are tested and found to react to a tuberculin test only a small number are suffering from or rapidly develop actual disease.

Two possibilities suggest themselves: either that the bacilli which enter the body in childhood remain in a latent condition for a considerable period of time, until some evil influence leads to a reduction in the resistance of the host; or that adult tuberculosis is practically unconnected with the infantile contamination and results from renewed external infection. Von Behring at one time adopted the view that infection during childhood with bovine bacilli and recrudescence in later life was the usual sequence; and though at present the tendency is to refer the infection of children mainly to human sources, the "recrudescence" theory serves to explain the large proportion of cases in which no source of immediate infection can be traced. The two views are not, of course, mutually exclusive, and it is quite possible, even probable, that both may be true. At present, however, we have to recognise in this uncertainty another gap in our knowledge of tuberculosis.

Whether, then, the disease is relit or reinoculated it is clear that there are special causes at work which render some persons liable to contract tuberculosis, while others escape. These are the so-called "predisposing causes" of the disease. It is very generally admitted that some families suffer more than others from this affection, and it seems probable that there is some inherited peculiarity of constitution which induces this susceptibility. We call this a hereditary weakness of resistance to the bacilli. Instances of such strains of the human stock are within the experience of us all. Among my out-patients at this hospital I had one woman who had lost eight brothers and sisters from the disease; another had lost five brothers and sisters and one parent, and so forth. Members of these delicate families may succumb to tuberculosis, although they do not live under the same roof, but are scattered over the country, so that their special liability can hardly be attributed to direct infection from the same source, unless they are supposed all to contract the disease in infancy when they are together. Nevertheless, a family history of tuberculosis is only obtainable in a minority of all cases. Dr. Shrubsall[9] found that out of 1045 patients in this hospital 410 only had any tuberculous relative (39·2 per cent.); of these 230 had one or both parents affected, with or without other relatives. It is thus apparent that undue importance is often attached to the hereditary taint, and some authors even deny its existence altogether—for example, Calmette. The prognosis does not seem to be markedly worse in the hereditary than in the other cases.

THE INCIDENCE OF TUBERCULOSIS.

Doubts have been expressed as to any increased incidence of tuberculosis on particular races, but there seems definite evidence that the Jewish stock is rather less liable to infection than are the European races, while Celts and negroes suffer severely. Among Europeans it is said that the red-haired type is specially prone to tubercle. No age is exempt, but the young are specially liable to infection, the greatest mortality occurring in children under 5, and they suffer from the acute form of the disease and from affections of bones and joints especially. Some curious observations have been recorded in the Registrar-General's report for this country as to incidence on the two sexes, for whereas tuberculosis used to affect females most, now males suffer more. It is difficult to suggest any valid explanation of this phenomenon. Dwellers in towns, as already noted, fall victims to the disease with much greater frequency than countrymen, the incidence of tuberculosis rising markedly with every increase in density of population.

Careful observations have been made which show a definite connexion between defective housing conditions and the tuberculosis rate, back-to-back houses being especially often centres of the infection, while a direct parallelism can be traced between the existence of conditions of overcrowding and tuberculosis. Thus Henschen[10] investigated the question in Stockholm, and found that the incidence of tubercle in some of the poorer quarters was directly related to the number of persons per room, with the single exception of a district in the oldest part of the town where the rooms were so small that it was impossible for many persons to squeeze into each of them. This connexion between tuberculosis and defective housing has now been recognised by a multitude of observers and may be regarded as firmly established. It agrees with what is known as to the characteristics of the bacillus as previously noted. Dr. Clement Dukes says, "Tuberculosis is more a house disease than an infectious disease."

Similarly, a parallel can be drawn between the poverty of the inhabitants of a district and their liability to consumption. Thus in Hamburg the death-rate per 10,000 living was 10 among persons with an income of over 3500 marks (or say £175) per annum, 39 in those with incomes between 900 and 1200 marks, and 60 among those with 900 marks or under. Thus we find in the case of tuberculosis the verification of the saying of Sir J. Simon that "poverty in its severer forms is among the worst of sanitary evils."

Occupations and other Predisposing Causes.

Certain occupations seem to render those engaged in them more susceptible to tuberculosis. In this country the highest death-rate is in tin-miners, who are followed by filemakers, while lead- and copper-miners also suffer severely, but coal-miners little. Innkeepers and costermongers form other fatal trades. Artisans as a class escape fairly lightly, while farmers are the healthiest of all in respect of this infection.

The high rate among innkeepers is connected with the question of the abuse of alcohol as a predisposing cause of tuberculosis—one to which diverse answers have been given. On the one hand, the experiments which have been made on animals, by giving them alcohol and estimating their liability to contract tuberculosis and the rapidity of the disease when established in them as compared with that in normal animals, can hardly be used as a weighty argument for a similar effect on mankind. Henschen, who points out that the tuberculous death-rate in

Sweden shows a parallelism with the consumption of alcohol, is yet inclined to believe that the drug has little direct influence on the origin of this infection. He draws attention to the fact that alcoholics are usually reduced by their excess to poverty, and that their surroundings are unsatisfactory. He is supported in attaching little weight to intemperance in itself by the statistics of the Phipps Institute in the United States. On the other hand, Brouardel held the opinion that alcohol is the most powerful factor in the spread of tuberculosis; and it appears to be established that the abuse of alcohol may diminish the amount of protective substances present in the blood. Further, everyday observation, if we may so call it, tends to create a belief in the action of this substance in predisposing to consumption and other forms of tubercle—witness the frequency of tuberculous peritonitis in patients suffering from cirrhosis of the liver; so that in default of more definite information we may remain—if not, as Disraeli said, "on the side of the angels," at least on the side of the teetotalers in this particular respect.

The action of other diseases in predisposing to tuberculosis is well known. As examples we may note the frequency of an outbreak of the disease in children after measles or whooping-cough and the liability of diabetic subjects to succumb to rapid pulmonary tuberculosis. Mediterranean fever and congenital defects of the heart may also be mentioned in this connexion. Some authors have attributed the occurrence of tuberculosis of the lungs to such anatomical peculiarities as a constriction of the upper thoracic aperture or congenital smallness of the heart. Local injury in the form of sprains and bruises seems to lead in some instances to tuberculosis of joints and bones.

FORMS OF THE DISEASE.

Time does not admit of a lengthy account of the nature of the disturbances brought about in the body by the tubercle bacillus. It is necessary, however, to point out that the disease takes two main forms—one the acute generalised infection, and the other the chronic destructive variety seen in pulmonary, renal, and other local tuberculoses.

Acute general miliary tuberculosis is met with most often in children, and the bacilli are carried by the blood stream and deposited in practically all the organs of the body, where they give rise to the familiar small nodules, histologically consisting of giant, epithelioid, and small round cells. The giant and epithelioid cells are seemingly derived from the lining cells of the lymphatic channels in which the bacilli settle and multiply. The disease is characterised by high irregular fever and signs of general toxæmia, diagnosis from enteric fever being often difficult; and the condition points to a rapid multiplication of the organisms and vigorous manufacture of toxins, the host having scarcely any power of resistance against the invasion.

In the chronic form, on the other hand, the bacilli settle in some local focus and the disease extends by continuity of tissue—that is to say, by way of the minute lymphatic spaces and channels—producing a gradual destruction of the organ attacked, but often failing to establish itself in any other. This failure is apparently not due to the fact that the bacilli are imprisoned in the tissue at the original seat of infection, as many observers have noted that in pulmonary tuberculosis bacilli can be found in the blood stream. Inability to extend to other parts seems to be due to the existence of some general immunity against attack. In the final stage of the disease, indeed, when the resistance of the host is worn out, an extension of miliary tubercles may occur to more distant parts of the affected organ and also to other parts of the body. Thus we may see the termination of a case of consumption brought about by an acute miliary tuberculosis of the remaining portions of lung tissue or by tuberculous meningitis.

THE TOXINS AND MECHANISM OF RESISTANCE.

As to the nature of the poisons formed by the tubercle bacillus little certain knowledge seems to exist. Three varieties have been described—fatty bodies from the covering membrane of the bacilli, soluble products of their activity, and the actual proteins representing the living substance of the organisms. Among the definite effects due to one or other of these may be noted the production of fever—a general reaction—and the necrosing property which results in caseation. Whether a special poison is associated with the tendency to sweat is not clear. Piéry[14] has asserted that tubercle bacilli are eliminated with the sweat.

If little is known of the toxins at work, it is not surprising that we are equally uncertain as to the mechanism of resistance. No definite antitoxin analogous to diphtherial antitoxin has been identified. Of bacteriolytic action, such as occurs in the case of cholera, there is also little known, though some writers regard the granular appearance of the bacilli seen in certain cases as evidence of commencing lysis. Phagocytosis certainly occurs, and in pleural and pericardial effusions the leucocytes can be seen loaded with bacilli, while the opsonising action of the serum has been sufficiently proved; but it is not by any means clear that phagocytosis is an important factor in immunity to tubercle. We are left with the possibilities either of some substance in the serum which inhibits the growth of the organisms, though it does not actively destroy them, or of an increased power acquired by the tissue cells of resisting the destructive action of the toxins. Anatomically, arrested tuberculosis is characterised by areas of dense fibrous tissue in the centre of which there may remain living bacilli. That some antibody is formed in the infection seems sufficiently proved by the phenomenon of complement fixation (analogous to the Wassermann test for syphilis) which is pretty constantly present in tuberculous patients. A short experience of this reaction as a clinical test for tuberculosis—too short to enable any very certain statement to be made—suggests that it is at least as trustworthy for diagnostic purposes as the agglutination test for enteric fever associated with the name of Widal. Some actual agglutination of tubercle bacilli may be effected by the serum of tuberculous patients.

The possibility of producing an increase of resistance in animals by vaccines of tubercle bacilli was for a long time in doubt, attempts to produce attenuated strains of the organisms usually proving abortive. Positive results have been, however, reported from time to time, some of the most recent being those of Webb and Williams[15] in America, who were actually encouraged to try inoculation of living bacilli into children of tuberculous parents as a prophylactic against infection. The doses used were infinitesimal, starting with one bacillus and rising to only 150, but these observers claimed that there resulted a gain of weight and general improvement in health. Some degree of immunity is apparently produced in cattle by injection of tubercle bacilli derived from human sources,

which do not set up infection in adult animals and seldom prove virulent even to calves. A similar use of organisms derived from a widely divergent type of animal host has been made by Friedmann and by Piorkowski, acid-fast organisms derived from a disease occurring in the turtle being employed as treatment for tuberculosis in mankind. A brief trial of such a preparation in this hospital did not lead to any striking immediate effects, but it is fair to add that such are scarcely to be looked for in so chronic a disease as tuberculosis of the lungs.

THE DECLINE IN TUBERCULOUS MORTALITY.

A very noteworthy decline in the death-rate from tuberculosis has been observed in practically all parts of the civilised world in recent years. In this country it is estimated that it has fallen 50 per cent. in the last 50 years, and sanguine writers and speakers have been led to boast of the conquest of consumption, and even serious physicians to predict that in another generation it will be as rare a disease in this country as typhus now is. We can only say that "it is a consummation devoutly to be wished."

It is desirable to consider, so far as any data are available, what are the probable causes of this decline in tuberculous mortality. The rate of fall from year to year is shown in the form of an instructive curve by the Registrar-General, from which it appears that there has been a fairly steady fall since 1851, but that the descent is steeper and more constant since 1867. Now the bacillus was not discovered by Koch till 1882, so that we can hardly flatter ourselves that the improvement has been brought about by scientific warfare against the causal organism. It is noteworthy that in 1868 was passed the first Act dealing with the housing of the working classes, and that the period from 1868 to the present day coincides with the development of modern sanitary and humanitarian legislation and with a general rise in the standard of comfort and cleanliness. An explanation based on this phase of progress would agree with what we have already noted with regard to the probable conditions precedent of infection—indoor life, overcrowding, and dirt.

It is also shown by the statistical tables that tuberculosis of bones and joints—forms specially liable to occur in young children—has actually increased, probably owing to the wide dissemination of the infection already mentioned. On the other hand, the maximum mortality now occurs at a later age than formerly. It would seem that an increased power of resistance to tuberculosis has been developed by the population at large, and that it is partly this factor which has led to the diminishing death-rate. Römer,[16] who has elaborated this view, believes that the almost universal infection with tubercle bacilli in early childhood acts as a form of vaccination and induces some subsequent immunity in those who overcome the original dose of virus. Hence tuberculosis in adults is usually a chronic disease—a modified tuberculosis analogous to the modified small-pox seen in the vaccinated—whereas in the young child it is liable to occur in the acute virulent form of general miliary tuberculosis. He points out in this connexion that comparatively uncivilised races coming in contact with Europeans suffer severely from tuberculosis, the acute form of the disease being specially common in such virgin soil, just as the Sandwich Islanders were decimated by measles when this affection was first introduced among them.

It would seem indeed to be a general rule that as a disease becomes widely disseminated in a community the level of resistance to it is raised, either by survival of those stocks which are naturally most immune, the more susceptible being killed off, or by actual hereditary transmission of acquired immunity. This principle has been invoked to explain the rarity in these days of the malignant forms of syphilis which formerly were commonly encountered, and the decreasing mortality from tuberculosis is in all probability partly due to this cause.

CONCLUSIONS.

If we summarise the conclusions to which the above considerations lead we may shortly infer:—

1. That infection with tuberculosis is very widespread and takes place largely in infancy and early childhood.

2. That it is partly due to bacilli derived from human sources, partly of bovine origin, but that the former type greatly predominates.

3. That direct communication from one human patient to a healthy individual does not occur in adult life under good sanitary conditions, with the possible exception of a few instances in which there has been very close and prolonged contact. Under bad hygienic conditions direct infection may occur, children being specially susceptible.

4. That the exact mode of transmission of the bacillus is unknown, but that inhalation affords the simplest explanation, although the localisation of the chronic form of the disease in the lungs is not in itself evidence of direct implantation there.

5. That the chronic form of the disease met with in adults is due to their increased resistance, as compared with children who suffer from the acute variety of tuberculosis, and that this increased resistance may be the result of early inoculation with sub-lethal doses of the bacilli.

6. That the outbreak of tuberculosis in later life may be due either to re-infection from without or to recrudescence of a latent focus of old infection.

7. That a general rise in resistance has been brought about owing to the wide dissemination of the disease among European nations, and that the fall in the death-rate is largely due to this factor and to improved hygienic conditions.

From these conclusions we may further deduce the practical moral that the most hopeful measures which can be taken with a view to combat the disease are such as are directed towards improving the general well-being, and especially the housing conditions, of the poorer classes.

References to recent articles.—1. Centralblatt für Bakteriologie, 1911, Band lix., Heft 3. 2. Tuberculosis, 1911, vol. x., No. 9. 3. Deutsche Medizinische Wochenschrift, March 6th, 1913. 4. Zeitschrift für Tuberkulose, 1913, Band xx., Heft 2. 5. International Congress on Tuberculosis, 1913. 6. Tuberkulose Arbeiten aus dem Kaiserlichen Gesundheitsamt, 1907-8, Heft 7. 7. Deutsche Medizinische Wochenschrift, 1911, No. 30. 8. Arbeiten aus dem Pathologischen Institut zu Tübingen, 1912. 9. Brompton Hospital for Consumption Medical Report, 1908. 10. Beiträge zur Klinik der Tuberkulose, 1911, Band xx., Heft 2. 11. Ibid., Heft 3. 12. Presse Médicale, 1911, No. 63. 13. Tuberculosis, September, 1909. 14. Gazette des Hôpitaux, 1912, No. 37. 15. Journal of American Medical Association, Oct. 28th, 1911. 16. Beiträge zur Klinik der Tuberkulose, 1913, Band xxii., p. 304. Berliner Klinische Wochenschrift, 1912, No. 16.

PRESENTATIONS TO A MEDICAL MAN.—Mr. Charles Jenkins Alexander, M.B., B.Ch., B.A.O. R.U.I., who is resigning the post of resident medical officer at the Winsley Sanatorium, was entertained at a farewell concert given at the institution recently, when he was the recipient of a series of presentations made on behalf of the resident staff and patients.

THE PRESENT POSITION OF ACUTE APPENDICITIS AND ITS COMPLICATIONS.

BY HUGH LETT, M.B. VICT., F.R.C.S. ENG.,
SURGEON TO THE LONDON HOSPITAL, WITH CHARGE OF OUT-PATIENTS, ETC.

FEW things are more gratifying than the advance which surgery has made during the last 25 years, and in particular the surgery of the abdomen. Appendicitis is but one of the numerous diseases which are now more or less under control of the surgeon, and a disease through which the patient can be successfully carried if only the surgeon is given a free hand from the onset.

In a paper read before the Royal Medical and Chirurgical Society 25 years ago (in 1888) Sir Frederick Treves first proposed that in cases of relapsing typhlitis the appendix should be removed during the period of quiescence. His proposal was not received very enthusiastically, but as he said in opening the important discussion on appendicitis before the same society in 1905, of late years he had no ground for complaint on that head. At that time, 1905, there was no question whatever that removal of the appendix in the interval between the attacks was a very valuable form of treatment and attended with little risk, but at the same time statistics were brought forward which showed that operation during the acute stage of appendicitis was attended with a truly appalling mortality. For purposes of that discussion I collected 1000 cases which had been operated upon at the London Hospital. Of these 1000 cases, 363 were operated upon during the quiescent period, of whom 4 died—that is, a mortality of 1·1 per cent. The acute cases I divided up into three principal groups: those in which operation was performed during the attack, where there was local peritonitis but no abscess; second, those in which there was an abscess; and, third, those cases in which there was general peritonitis, with or without an abscess. Of the first group, those in which there was local peritonitis but no abscess, 34 patients recovered and 6 died, a mortality of 15 per cent. In the cases where an abscess was present 396 recovered and 35 died, a mortality of 8·1 per cent., but out of a total of 166 cases of general peritonitis only 39 recovered, while 127 died, representing the terrible mortality of 76·5 per cent. These figures were collected over a period extending from July 1st, 1900, to August 15th, 1904.

In order to have a basis of comparison between the present results of operation in appendicitis and those obtained up to and including the year 1904, I have collected a further 1000 cases from the registers of the London Hospital.

The first point which is, perhaps, of considerable interest as showing the increase of appendicitis, and partly the more ready diagnosis by the general practitioners who send the cases to the hospital and their appreciation of the value of early operation, is the fact that in the year 1912 alone no fewer than 936 cases were admitted to the London Hospital. Among them were 38 cases which for one reason or another were not operated upon, two of them were moribund on their admission to the hospital and died shortly afterwards. I have excluded these 38 cases and completed the series by adding 102 cases, 70 men and 32 women, which were admitted to the hospital at the beginning of 1913.

TABLE A.—*Showing the Past and Present Mortality of Appendicitis.*

—	1905 series.				Present series.			
	Total.	Recovered.	Died.	Mortality per cent.	Total.	Recovered.	Died.	Mortality per cent.
Quiescent	363	359	4	1·1	302	300	2	0·7
Abscess	431	396	35	8·1	211	204	7	3·3
General peritonitis	166	39	127	76·5	80	64	16	20
Other acute cases	40	34	6	15	407	400	7	1·7
Total cases operated upon during attack...	637	469	168	26·4	698	668	30	4·3
Grand total...	1000	828	172	17·2	1000	968	32	3·2

Of the 1000 cases, 698 were operated upon during the attack; 302 were operated upon during the quiescent stage. Of the patients who were operated upon 32 died, which gives a mortality in all cases of 3·2 per cent. Among the 302 operations performed between the attacks there were two deaths, a mortality of 0·7 per cent. These patients were suffering from actino-mycosis of the appendix; death was due in both cases to extension of the disease and did not follow immediately upon the operation.

There were 698 patients who were operated upon during the acute stage, and I have divided them up into four groups, according to the condition found. In the first group are placed those patients who had general peritonitis; there were 80, of these, 16 of whom died, giving a mortality of 20 per cent. In the second group are those patients who had an abscess; there were 211; 204 recovered and 10 died, giving a mortality of 3·3 per cent. In the third group are those who had local peritonitis only; this includes those cases in which the peritonitis was diffuse but did not involve the whole of the peritoneal cavity; there were 123 with 6 deaths, a mortality of 4·8 per cent. Finally, in the last group are placed those patients in whom the inflammation was limited to the appendix and there was little or no evidence of local peritonitis; in this group are 284 patients; 1 died, a mortality of 0·3 per cent.

When these statistics are compared with those which I prepared from a similar number of cases in 1905, we see that the total mortality has been reduced from 17·2 to 3·2 per cent., and the mortality in operations performed during the acute stage from 26·4 to 4·3 per cent. If considered in further detail we find that the mortality in general peritonitis has fallen from 76·5 to 20 per cent., in abscess from 8·1 to 3·3 per cent., and in the remaining acute cases with or without localised peritonitis from 15 to 1·7 per cent.

We can now form some idea as to prognosis in the different forms of acute appendicitis if the patient is submitted to surgical treatment. It is, however, far more important to draw attention to the way in which the prognosis varies according to the time at which operation is undertaken. I found on examining the statistics of the London Hospital that out of 162 patients who were operated upon during the first twenty-four hours of an attack only 2 died, giving a mortality of 1·2 per cent.; of those patients who were operated upon during the

second twenty-four hours of an attack, 152 in all, 6 died, a percentage of 3·9; whereas of those in whom operation was postponed until the third day of the attack, 115 in all, 10 died, a percentage of 8·7. I do not think that any deductions can be drawn from the death-rate of the cases operated upon from the fourth to the ninth days, as the numbers are so small. But attention may be drawn to the fact that of the 58 patients operated upon on the tenth day or later only 1 died. If Table B is examined for details of these cases, it

TABLE B.—*Showing the Mortality of Operation on the Different Days of the Attack.*

Day of attack.	Inflamed.		Local peritonitis.		Abscess.		General peritonitis.		Total.		Mortality per cent.
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	
First day	99	1	35	0	13	0	13	1	160	2	1·2
Second day	62	0	39	1	25	1	20	4	146	6	3·9
Third day	40	0	10	3	43	2	12	5	105	10	8·7
Fourth day	22	0	10	1	10	0	6	1	48	2	4
Fifth day	12	0	3	0	17	0	3	1	35	1	2·8
Sixth day	5	0	4	0	11	0	1	0	21	0	0
Seventh day ...	9	0	3	0	23	1	6	2	41	3	6·8
Eighth day	4	0	1	0	5	0	0	0	10	0	0
Ninth day	2	0	1	0	5	2	1	2	9	4	30·7
Tenth day or later	14	0	3	1	40	0	0	0	57	1	1·7
Day not stated ...	14	0	8	0	12	1	2	0	36	1	2·7
Total	283	1	117	6	204	7	64	16	668	30	4·3

will be seen that 40 were cases of abscess and in 14 the inflammation was limited to the appendix—in other words, that in 54 cases the condition was well localised, consequently there was much less danger in operating upon them than in cases which were not so localised.

These statistics illustrate the value of early operation, during the first twenty-four hours of the attack if possible, and the cases are sufficiently numerous to justify the statement that operation during the first twenty-four hours is attended with extremely little risk; operation during the second day with considerably more risk, though it is still small; but if operation is postponed until the third day the prognosis is much more serious.

Some may argue that the results obtained in the operations on the tenth day or later are strongly in favour of postponing operation. The reply, of course, is that it is generally impossible to tell in which cases the inflammatory process will become localised and operation may be deferred with safety. I would once more point to the total mortality of 3·2 per cent. in this series, compared with the total mortality of 17·2 per cent. in the series published in 1905, when operation was very rarely performed in the first stages of the attack, but was postponed as long as possible, in order to allow the attack to subside, or failing this, to allow the inflammation to become localised. The earlier statistics illustrate the results of postponing operation; the present ones the result of operating early. If all cases could be left with safety until the tenth day the general mortality would be still lower than it is; but unfortunately they cannot, and it is therefore our duty to remove the appendix at a time when the risk is reduced to a minimum—that is, during the first twenty-four hours—a procedure which offers the prospect of a mortality of only 1·2 per cent.

Complications of Acute Appendicitis.

Unfortunately, it is by no means rare for the patient's convalescence to be delayed by certain complications which may arise during the attack. Thus we find that out of 698 patients operated upon during the acute stage, in 83—that is, 11·9 per cent.—various complications arose. Among them were 25 cases of fæcal fistula, 22 cases of secondary abscess, 17 pulmonary complications, and 12 cases of intestinal obstruction. Three patients had more than one complication; for example, of two of the cases of pleural effusion, one was associated with a subdiaphragmatic abscess and the other with bronchopneumonia, and the patient with empyema also had a subdiaphragmatic abscess.

That 4·9 per cent. of all patients operated upon during an attack of appendicitis, or 1 in 8, should suffer from complications is very unsatisfactory, but even so, it is a great improvement on former results. In the 1905 series, out of 636 cases of acute appendicitis, 146, or 22·9 per cent., had complications. The percentage has therefore been reduced from 22·9 to 11·9 per cent. The explanation of this reduction is easily found; there can be no doubt that it is due to operating early instead of postponing it until the patient has developed an abscess or general peritonitis. For on investigating the 83 cases in which complications arose, we find that in all but six there was an abscess or peritonitis, general or local, in the great majority an abscess or general peritonitis. Of the six cases in which the inflammation remained localised to the appendix, one was a case of intestinal obstruction in which the appendix itself formed the obstructing band, and probably became gangrenous in consequence of the cutting off its blood supply by the stretching of the appendix and its mesentery.

TABLE C.—*Showing the Complications which Occurred.*

—	1905 series.	Present series.
Total number of cases operated upon during the attack	636	698
Secondary abscess	16	22
Subdiaphragmatic abscess	6	4
Fæcal fistula	49	25
Thrombosis	12	4
Pulmonary complications—	45	17
Pulmonary embolism	1	0
Empyema	7	1
Pleural effusion	14	4
Pleurisy without effusion	2	0
Bronchopneumonia	17	7
Lobar pneumonia	0	2
Bronchitis	4	3
Intestinal obstruction	10	12
Pylephlebitis	4	2
Parotitis	4	0
Total number of complications	146	86

Note.—One of the patients with pleural effusion also had a subdiaphragmatic abscess, and another had bronchopneumonia. The patient with empyema also had a subdiaphragmatic abscess.

Secondary abscess.—Secondary abscesses form a large proportion of the complications, for as will be seen on reference to Table C, a secondary abscess developed in no less than 22 of the 83 patients apart from the four patients who had a subdiaphragmatic abscess. The majority occurred in the pelvis in the rectovesical pouch, as a natural consequence of the routine adoption of the valuable Fowler's position, which causes all free fluid in the peritoneal cavity to gravitate to the pelvis. But the number of these cases of secondary abscess is, I think, unnecessarily large; indeed, including the cases of subdiaphragmatic abscess it is greater than the number of secondary abscesses in the 1905 series, in which there were only 22. The frequency of this complication is due, I think, to inadequate drainage. A few years ago there was a tendency to leave drainage tubes in too long; more recently the pendulum had swung to the opposite extreme, and drainage was not continued long enough, and, indeed, in some instances not employed where it was necessary. Fortunately, the prognosis is good—none of the cases of secondary abscess proved fatal.

Subdiaphragmatic abscess.—A subdiaphragmatic abscess occurred four times. In one case it was associated with clear fluid in the right pleura, and in another case with a right empyema. All four abscesses occurred in old-standing cases; in two there was general peritonitis, and operation was not performed until the fifth and sixth days of the attack; in two there was an abscess. All four cases recovered. These results are unusually good. Hoffmann quotes Körte, who collected 60 cases, with a mortality of 33·3 per cent. Barnard collected 76 cases, 40 lived and 36 died, a mortality of 47·4 per cent. Twelve of these were not operated upon and they all died. Of the 64 who underwent operation 24 died, a mortality of 37·5 per cent. But of the 21 consecutive cases operated upon by Barnard himself only 17·7 per cent. died, a proportion which is a truer representation of the mortality of subdiaphragmatic abscess at the present day. We must regard a subdiaphragmatic abscess as a serious complication. For although the four cases mentioned above all recovered, the number is too small to justify any deductions as to the mortality of this condition; nevertheless, the fact that they did all recover is encouraging.

Fæcal fistula.—A fæcal fistula is far more likely to occur in a patient who is operated upon late in an attack than in one who has been operated upon within the first 48 hours. It may result from any of the following causes: 1. Direct extension of the gangrenous process from the appendix to the cæcum or ileum. 2. Imperfect occlusion of the appendix stump. This may occur in cases in which only part of the appendix has been removed, as the proximal part could not be discovered, or it may occur in those cases in which an invaginating purse-string suture placed in the wall of the cæcum round the insertion of the appendix has either cut through the inflamed and œdematous tissue or given way. 3. It may be due to actual tearing of the intestine at the time of operation. 4. It may be due to patches already ulcerated and eroded, which, when freed from the adhesions which support them, perforate. 5. The pressure of a drainage tube on the intestine. In cases of prolonged suppuration, this pressure, combined with sepsis, may give rise to ulceration of the intestine, with subsequent formation of a fæcal fistula. Most of these fistulæ can be avoided by early operation; the following case may be given as an example.

About two years ago I operated upon a boy aged 18 years, 36 hours after the onset of the attack. The appendix was gangrenous and continuous with it was a gangrenous patch on the cæcum of the size of a five-shilling piece. The appendix was removed, the gangrenous part of the cæcum invaginated, and the patient made a rapid and uninterrupted recovery. If an early operation had not been undertaken a fæcal fistula would have been inevitable.

Of the 25 cases of fæcal fistula there were only four in which the operation was performed within the first 48 hours. In the great majority of cases the fæcal fistula followed an old-standing abscess. In the present series of cases fæcal fistula occurred 25 times in 698 acute cases—that is, 3·6 per cent.—a reduction of about 50 per cent. on the incidence of fæcal fistula in the cases of 1905, for among them out of 637 patients who were operated upon for acute appendicitis, 49—that is, 7·7 per cent.—had fæcal fistula.

Thrombosis.—This is another complication which is met with less frequently than formerly. Thrombosis of the femoral veins occurred four times, twice on the right side and twice on the left, compared with 12 times in the 1905 series. It is more common for the left femoral vein to be thrombosed than for the right one, though not in as great a proportion as occurred in these 12 cases—namely, 11 on the left to 1 on the right.

In the present series of cases the first was a boy with a retrocæcal abscess who had been ill for five days before his admission to the hospital; the second case, a man aged 45, had an abscess and had been ill for ten days; in the third case, a man aged 53, there was no abscess, but the operation was a difficult one, and there were many adhesions. The fourth patient was a man aged 65, who had general peritonitis with a gangrenous appendix, and who had only been ill for a day and a half. In the latter case there is little doubt that the age of the patient and his feeble circulation predisposed to thrombosis. All four patients recovered.

Pulmonary embolism.—In connexion with thrombosis we must consider the extremely important condition of pulmonary embolism. There was no case of pulmonary embolism in the present series, but in 1905 there was one case, which proved fatal. In 4000 cases of appendicitis Hoffmann reported 39 cases of thrombosis of the femoral veins, and no less than 22 of these gave rise to pulmonary embolism, 18 of these 22 cases proving fatal. McWilliams in 685 acute cases found four cases of pulmonary embolism, of whom three died, on the third, ninth, and tenth days. If we take these two reports together, we see that out of 26 cases 21 died, a mortality of 80·8 per cent.

Garré and Quincke allude to the varying mortality of pulmonary embolism in the statistics of different authors. They quote the following:—

Lotheissen found	52	deaths out of	61	cases	=	83·3%
Albanus	10	,, ,,	23	,,	=	43·5%
Gebele	11	,, ,,	14	,,	=	79·0%
Wyder	8	,, ,,	12	,,	=	66·0%

The difference is probably due to the inclusion of slight cases by some authors, while others only included cases in which the symptoms were pronounced and severe.

Pulmonary embolism is, perhaps, the greatest tragedy of surgery, and any treatment which is likely to prevent this calamity should receive most careful attention. Hoffmann has obtained

remarkable results by making the patient stand up out of bed, even if only for a minute, the day after operation, and this is repeated on subsequent days. If it is quite impossible for the patient to stand, passive and active movements of the lower extremities are instituted, and, later, massage. His statistics embrace all cases up to the year 1912, and this treatment was begun in the year 1908. After the introduction of this treatment there were only 3 cases of thrombosis and emboli, compared with 36 in the previous years, and none of these 3 had been made to get out of bed the day after operation. This is most suggestive, and the treatment is worthy of very careful consideration.

The mortality of severe cases of pulmonary embolism appears to be about 75 per cent., but, as was pointed out by Sir R. Douglas Powell, in all probability many of the cases of bronchopneumonia, empyema, and pleurisy which arise as complications of appendicitis are really embolic in origin. Fortunately, we can say that at the present time, with modern methods of treatment, fatal pulmonary embolism is an extremely rare complication of appendicitis.

In four cases the pulmonary artery has been opened and the clot removed by Trendelenburg's operation. The most successful case was a woman operated upon by Krüger; she lived for five days and a quarter after the operation, and died from purulent pleurisy.

Other pulmonary complications.—Pulmonary affections form a large proportion of the total number of the complications; in the 1905 series they formed 45 out of a total of 146, a proportion of nearly one third, and in the present series 17 out of a total of 86. Reference to Table C will show the relative frequency of the different conditions, bronchopneumonia heading the list, and pleural effusion coming second.

Empyema only occurred once, and then was in association with a subdiaphragmatic abscess. In the 1905 series there were seven cases of empyema; they all appeared to be the result of direct extension of the inflammatory process from below the diaphragm to the pleural cavity. A left-sided empyema occurred once in connexion with a left subdiaphragmatic abscess.

Pleural effusion occurred in four cases—in one the patient had been ill three weeks and had a subdiaphragmatic abscess. The second patient was operated upon for general peritonitis on the third day of the attack, and developed double pleurisy and bronchopneumonia. Both of the other two patients had local peritonitis, and the fluid was on the right side of the chest.

In the remaining cases of bronchopneumonia and lobar pneumonia there was an abscess or peritonitis in nine. Bronchopneumonia developed in one case of acute appendicitis in which the inflammation was limited to the appendix, and in another similar case, in which there were adhesions and free fluid in the peritoneal cavity, the patient had right lobar pneumonia.

A patient aged 64, who had a perforated appendix and was operated upon four days after the beginning of the attack, died from bronchitis and heart failure.

These results are striking evidence of the relation between late operation and pulmonary complications, and indicate the prophylactic value of operation during the first 24 hours of the attack. This is borne out by the 1905 series. There was an abscess or general peritonitis in 13 of the 14 cases of pleurisy with effusion, and in 15 of the 17 cases of bronchopneumonia—the remaining 2 cases were considered to be examples of ether pneumonia. The 7 cases of empyema have already been referred to; they were all associated with an abscess or general peritonitis.

Intestinal obstruction.—Intestinal obstruction is a grave and not uncommon complication of appendicitis. In the 1905 series of cases there were 10 cases of intestinal obstruction, giving a percentage of 1 for all cases, and 1·5 per cent. if only the cases of acute appendicitis are included. In 9 there was definite mechanical obstruction by bands, adhesions, &c. Only 1 case of ileus is recorded, though there were probably more. Six of the patients died and 4 recovered. In the 1912 statistics I found 12 cases of intestinal obstruction—that is, 1·2 per cent. of all cases, or 1·7 per cent. of the acute cases. The obstruction may be either paralytic or mechanical. In the paralytic variety or ileus there is paralysis of the intestine with resulting symptoms of intestinal obstruction. In my present series there were five examples of this condition, and four of them died. In its milder forms it is commonly met with, and therefore it is possible to assume that there were other cases in which ileus was present to a slight degree, but no mention has been made of it. When ileus occurs in an attack of appendicitis it is always of grave prognosis, but less so when it occurs early in an attack than later. In the former condition, particularly when it is present before operation, it is often possible to overcome it by appropriate treatment, but when it occurs in the later stages the prognosis is very grave.

Mechanical obstruction occurred in seven cases. It may be due to the presence of adhesions producing a kink in a piece of intestine or adhesions may take the form of a band, which may form a loop round a piece of intestine and so ensnare it, or a loop of intestine may pass underneath it and become strangulated in that way. Lastly, the appendix itself is not very uncommonly the immediate cause of intestinal obstruction. I recently operated upon a patient in whom the tip of the appendix was adherent to the root of the mesentery; it had formed a loop, and through this loop a piece of intestine had passed and was tightly gripped. Not only was the intestine gangrenous, but also the appendix itself. When the appendix forms the constricting band the prognosis becomes rather more serious, as not infrequently the stretching of the appendix has cut off its blood-supply and gangrene has followed, with resulting general peritonitis. In these cases the primary condition appears to be that of intestinal obstruction, with secondary gangrene of the appendix.

Ruge found 44 cases of intestinal obstruction in 2385 cases of appendicitis, a proportion of 1·8 per cent., which is not very far from the proportion of 1·2 per cent. in my cases. Among these 44 there were 14 cases of ileus, 7 of whom recovered and 7 died. Of the other cases the appendix itself formed the constricting band in no less than 6; of these only 2 recovered and 4 died.

The frequency with which intestinal obstruction occurs, as is the case with nearly all the other complications of appendicitis, depends largely on the time at which the primary operation is performed. It is interesting to note that in all of my 12 cases either an abscess or general peritonitis existed. None of these cases had been submitted to what is

known as early operation, that is, within the first 24 hours, or even the first 48 hours.

In discussing intestinal obstruction due to appendicitis one must bear in mind the possibility of an attack of appendicitis leaving behind it bands and adhesions, which may cause intestinal obstruction at a later date. The prognosis is grave. Of the 10 cases in the 1905 series 4 recovered and 6 died; in the present series 6 recovered and 6 died; while of Ruge's cases 23 recovered and 21 died; a total of 33 recoveries and 33 deaths, giving the high mortality of 50 per cent.

Jaundice.—Speaking generally, when jaundice complicates an attack of appendicitis the prognosis is grave. Hoffmann has recorded 11 cases; in nearly all of them there was acute perforative appendicitis, in several diffuse peritonitis, or extensive abscesses. He regards jaundice as a sign of very severe illness, especially if it appears early in the attack. Reichel thinks that jaundice may arise from the spreading of infectious material, and therefore advises that in the case of an abscess one should be content with opening it only, and nothing more, when the disease has existed 48 hours. Eight of his 18 patients who had jaundice recovered, a mortality of 55·55 per cent., but of Aldehoff's 14 cases 11 recovered and only 3 died. It may be due to various causes, and may appear at various stages of the illness. The following are the principal causes: (1) Simple catarrhal jaundice; (2) toxæmia; (3) direct extension of the inflammation from the appendix to the gall-bladder and biliary ducts; (4) pylephlebitis; and (5) the so-called delayed chloroform poisoning.

1. *Simple catarrhal jaundice.*—I recently saw a case of this sort in which the patient's illness began with vomiting; catarrhal jaundice shortly followed, and on the next day pain began in the right iliac fossa. Operation was performed within 36 hours, and an acutely inflamed appendix removed. The jaundice followed the usual course of catarrhal jaundice and subsided in the ordinary way after a brief period in which the stools were clay-coloured, the urine contained large quantities of bile pigment, and the skin and sclerotics were deeply tinged with yellow. This is the least serious form, and may be met with in varying degrees; in some cases there is merely a slight and evanescent tingeing of the sclerotics, but in others, as in the case just described, the patient may pass through a typical attack of catarrhal jaundice.

2. *Toxæmia.*—The second class consists of cases in which the jaundice appears to be the result of toxæmia. A good example of this has been described by Holländer. The patient had well-marked jaundice with an appendix abscess. The abscess was opened and drained and a gangrenous appendix removed. The jaundice disappeared within two or three days. In consequence of his experience in this case, Holländer suggests that when jaundice is present in cases of acute appendicitis it indicates that the appendix is gangrenous. There are also mild cases in which the jaundice appears in the early stages of the attack, and passes off shortly after operation; they probably belong to this second class.

3. In the third class are placed cases in which there is a direct extension of inflammation of the appendix to the gall-bladder, and numerous adhesions are found about the gall-bladder.

4. *Pylephlebitis.*—The fourth class is composed of cases which are still more serious. I refer to those cases in which jaundice is a result of portal pyæmia or acute pylephlebitis. These cases are, fortunately, rare. In the 1000 cases which I collected in 1905 there were 4 cases of pylephlebitis, all of which died. In the present series there were 2 cases, one of which was due to actinomycosis. It is, however, important to remember that jaundice is not always present in these cases. In neither of the two cases reported by Bidwell, one of which recovered, was there jaundice. The diagnosis of the condition is generally easy. The usual history is that of an attack of acute appendicitis, the formation of an abscess, and, after a varying interval, the onset of rigors, and a few days later the appearance of jaundice. A little later still the liver may enlarge and become tender. It is interesting to note, however, that this is by no means invariably the sequence of events. I remember a patient who was, some years ago, in the London Hospital under my care with jaundice, enlargement of the liver, and tenderness in the region of the gall-bladder. There was a history of an acute attack of pain on the right side of the abdomen three weeks previously. The temperature was raised. A diagnosis was made of acute cholangitis secondary to gall-stones, but operation proved that the patient had pylephlebitis with a small retrocæcal abscess and a perforated appendix. I have been rather struck in the few cases which I have come across by the comparatively mild local signs of appendicitis; but this cannot be taken as the rule, for in 7 cases reported by Hoffmann, 2 followed acute appendicitis, 3 after incising an abscess, and 2 after operation for diffuse peritonitis. Sasse, however, reports 2 cases in which the appendicitis was of such a mild type that the patients were not confined to bed; but about ten days after the beginning of the attack they developed symptoms of pylephlebitis and died a few days later. The gravity of the condition lies in the fact that as a rule the liver is riddled with small abscesses, and so is beyond surgical treatment. In Hoffmann's 7 cases, in only 2 was there an abscess sufficiently large to be incised; one of these recovered, but the other patient died. In my own experience I have had 2 cases which recovered, one of them a patient with a large abscess, which was drained, and the other a case of considerable interest, in which, on exposing the liver, I found numerous small abscesses the size of a pea or less; the staphylococcus pyogenes aureus was found in pure culture, a vaccine was prepared and given, and the patient made a good recovery. While the prognosis in cases of pylephlebitis is necessarily grave, it is not hopeless, and an exploratory operation should always be performed, and the condition found dealt with by drainage, where possible, otherwise by vaccines. It also goes without saying that in these cases the primary focus of the disease—namely, the appendix—should always be removed. With regard to treatment, Wilms has published a very remarkable case in which he ligatured the efferent veins leading from the appendix. This patient had had five rigors, but after the veins were ligatured the rigors ceased, and the patient made a good recovery without gangrene of the intestine, or any interference with peristalsis. Sprengel attempted to carry out a similar operation in a patient upon whom he had operated and removed a gangrenous appendix 36 hours after the beginning of the attack. Nine days after removal of the appendix the patient had a rigor, and two or three

every day subsequently. His attempts at ligature were unsuccessful, and a fæcal fistula developed at the lower end of the small intestine, probably due to gangrene through interference with the circulation. As he points out, the operation is likely to be difficult enough in a normal subject in the absence of inflammation, if there is no mesentery to the colon, and where there is a large amount of subserous fat; but if, in addition, the structures round the appendix are acutely inflamed, it becomes almost impossible to isolate the veins, and even if the veins are secured, the danger of ligaturing the arteries as well, and so giving rise to gangrene, is very great.

5. *Delayed chloroform poisoning.*—In the last class I would place cases of so-called delayed chloroform poisoning. The first symptom is usually vomiting, which comes on for no obvious reason about 36 hours after the operation, and the case is frequently fatal within 48 hours from the onset of the vomiting. I must, however, point out that jaundice is not present in all these cases. It is not necessary to enter here into the various theories. Guthrie, however, says that children with cyclical vomiting are particularly liable to post-anæsthetic poisoning, and that the administration of an anæsthetic on the eve of, or during an attack of, cyclical vomiting is attended by grave risk and should be avoided if possible.

Pylephlebitis.—This has already been discussed at sufficient length in the preceding section. Apart from a case of actinomycosis, there was only one case in the present series, and he fortunately recovered. In 1905 there were 4 cases, all of which proved fatal, and all followed an appendix abscess.

Gastro-intestinal hæmorrhage. — Melæna or hæmatemesis occurring in a patient suffering from acute appendicitis is a matter of grave importance; all the more so as in the majority of cases it is impossible to relieve the condition by surgical methods. In some cases the hæmorrhage comes from a duodenal ulcer; in others it may come from the stomach, either from a gastric ulcer or from numerous small erosions; in other cases, again, it may be impossible to say where it comes from, even on post-mortem examination.

About 12 months ago I operated on a patient who was suffering from an attack of appendicitis with a large pelvic abscess. He had been ill for two weeks. At the operation I removed the appendix and drained the abscess. All went well until five days after the operation, when he suddenly collapsed; his face became blanched and his pulse almost imperceptible. He improved under appropriate treatment, and shortly afterwards passed an offensive motion containing a very large quantity of altered blood; during the subsequent week he had several similar attacks, though less severe. All this time he had melæna, frequently three or four motions in the 24 hours. The question of operation was raised, but negatived, as his condition was such that any operative interference would almost certainly have proved fatal, apart from the fact that it was impossible to say where the hæmorrhage was coming from. Fortunately it gradually ceased, and he ultimately made an excellent recovery. Hoffmann reported 7 cases of severe gastro-intestinal hæmorrhage. In 3 patients there was general peritonitis at the time of operation, in 1 an abscess, and the other 3 were operated upon at an earlier stage. Only 1 patient recovered. In the other cases 2 showed hæmorrhage from a recent gastric ulcer, another showed serious erosion of the gastric mucosa. In another case the post-mortem examination showed no cause for the severe hæmorrhage. One patient died from hæmorrhage in a few hours, seven days after a smooth appendicectomy in the acute stage. There was no post-mortem examination. The seventh case was a boy who was making a straightforward recovery from general peritonitis, and died suddenly from severe hæmorrhage. The post-mortem examination revealed a duodenal ulcer with erosion of the splenic artery.

In 1908 Schwalbach collected 28 cases of gastro-intestinal hæmorrhage after operations for appendicitis, and added two of his own; 17 patients died and 13 recovered. The mortality in his series was directly proportionate to the severity of the appendicitis. Nine patients had diffuse peritonitis—they all died. Eight patients had an abscess with localised peritonitis—5 died and 3 recovered. Six patients had acute appendicitis with only slight peritonitis—3 died and 3 recovered; while of the 7 patients who were operated upon during the quiescent period all recovered. One-third of the cases occurred in children. Schwalbach thinks that the hæmorrhage is the result of thrombosis in the venous and arterial circulation in the omentum and mesentery. Fortunately this is a rare complication; it only occurred once in my present series of cases, and the patient recovered. If, however, a patient who has been operated upon for acute appendicitis has an attack of gastro-intestinal hæmorrhage the prognosis becomes grave, in direct proportion to the severity of the appendicitis.

Hæmaturia.—Hæmaturia is a rare but interesting complication of appendicitis, and its pathology is still somewhat obscure. Slight hæmaturia may be caused by the rupture of an appendix abscess into the bladder, but the amount of blood is, as a rule, very slight, and there is but little difficulty in making the diagnosis. On the other hand, a number of cases have been reported in which hæmaturia occurred on several occasions after an attack of pain in the right side of the abdomen, and the condition was supposed to be one of renal colic. It was only later, when symptoms of appendicitis definitely declared themselves, that the true diagnosis was made, and the patient was cured by removal of the appendix.

Cases of hæmaturia in appendicitis may be roughly divided up into two main groups. In the first may be placed those cases in which the appendix does not lie in contact with any part of the genito-urinary tract, and in the second those in which the diseased appendix is actually in contact with the kidney, ureter, or bladder. In 6 out of 15 cases discussed by von Frisch the appendix was adherent to the lower part of the ureter. As a general rule the hæmaturia follows an attack of pain in the right side of the abdomen, and in a few cases the colic and hæmaturia are brought on by violent exercise. Occasionally the hæmaturia is preceded by little or no pain.

The following case described by Hammersley is fairly typical. A lady had attacks of vomiting with shivering and colic every three months. Two days after the beginning of each attack blood appeared in the urine, and on one occasion the urine appeared to be almost pure blood. The attacks were brought on by unusual bodily exertion. On examination nothing abnormal could be detected, apart from a movable right kidney; the kidney was not painful or enlarged. There was no tenderness in the appendix region. Ultimately,

an attack occurred which was associated with rise of temperature, and tenderness in the right iliac fossa was present for the first time. The appendix was removed, and was found to be lying behind the cæcum, adherent to the right kidney and ascending colon. The patient had no further attacks of colic or hæmaturia.

A somewhat similar case in which the colic and hæmaturia followed exertion has been described by von Frisch.

Another remarkable case has been reported by Carless. A woman had typical attacks of renal colic with a history of previous severe pain in the right side. She was relieved after the passage of blood in the urine and a little gravel. The kidney and ureter were explored with a negative result. A week later the patient died from a perityphlitic abscess. The post-mortem examination showed that the appendix was lying on the back of the abdomen and hanging down over the pelvic brim in the region of the ureter.

It is interesting to note that in the majority of cases nothing abnormal is to be found in the urine apart from the blood. This is found in varying quantities, and it is not uncommon to find blood casts in addition to altered blood corpuscles. The most striking feature of the condition, however, is the way in which the hæmaturia clears up after removal of the appendix, and does not recur.

As for the explanation of the hæmaturia, in some cases there can be no doubt that there is a direct spread of the infection to the kidney, as in a case reported by Seelig, in which a perityphlitic abscess and a gangrenous appendix lay on the kidney. In those cases in which the appendix is adherent to the ureter, it may cause venous congestion and consequent bleeding from the mucous membrane of the ureter, or inflammation and swelling of the mucous membrane which may give rise to obstruction of the ureter, and so predispose to acute pyelitis and hæmaturia, as in the cases recorded by Hunner.

These two theories will not, however, account for those cases in which the appendix is not in contact with any part of the urinary tract. These cases must probably be explained either on the ground that there is a toxic nephritis, or that the kidney is the site of emboli or thrombosis. Von Frisch thinks that the hæmaturia is probably due to embolism or thrombosis, the presence of blood casts supporting this theory; he suggests that a retrograde thrombosis may take place owing to the free communication between the veins of the capsule of the kidney, the veins of the peritoneum, the lumbar veins, and the retroperitoneal veins. Whereas the theory of toxic nephritis will not hold good in the majority of cases, owing to the rapid recovery of the patient from the attacks, and the way in which no trace of albumin, no casts nor renal epithelium are to be found in the urine subsequently, still it may occur occasionally.

Prognosis.—The prognosis in the hæmaturia which is usually associated with appendicitis is excellent, as these cases clear up as soon as the appendix has been removed, leaving no trace, so far as we know, of any after-effects. On the other hand, if the hæmaturia supervenes whilst the patient is gravely ill from an acute attack of appendicitis, particularly if it is complicated by an abscess or general peritonitis, the prognosis is more serious.

When to Operate.

There is a steadily growing consensus of opinion that operation should be performed in all cases of appendicitis as soon as the condition is diagnosed. For at the beginning of an attack it is generally extremely difficult and frequently impossible, to give a prognosis and to say whether the patient will get well without operation or not.

From time to time various methods and tests have been announced which it was hoped would indicate the necessity for operation or not; but none of them have been found to be absolutely reliable. First, there was the question of leucocytosis; then there was the test administration of castor oil. If the patient was not worse after the castor oil operation was not performed; if, on the other hand, he was worse, operation was considered to be indicated—a very dangerous method: one which should never be used in private practice and extremely rarely in hospital. Oehlecker drew attention to the fact that the viscosity of the blood increases in proportion to the severity of the attack, and shows above everything else how widely the peritoneal cavity is involved. The more extended the peritonitis the higher the viscosity, but it does not tell how far the appendix itself is diseased—for example, an appendix may be gangrenous, but if it lies on the outer side of the cæcum and there is little or no peritonitis the blood may only show a very slightly increased viscosity.

Then, again, at one time it was said, "If the patient is not improving at the end of 48 hours operate." The reply to this is, of course, that one should not wait until the end of the first 48 hours, but if the diagnosis has been made operation should be performed at once. We need only point to the figures given above to emphasise this, which show that the mortality of patients operated upon during the first 24 hours is 1·2 per cent., during the second 24 hours 3·9 per cent., and during the third 24 hours 8·7 per cent. It may be objected that it is not necessary to operate upon all cases of appendicitis, and that many of them will subside without any operative interference whatever. This is perfectly true. The crucial point, however, is that in most cases we cannot tell at the beginning of an attack whether it is going to be a catarrhal one or whether perforation or gangrene will occur. Any surgeon who has a fairly wide experience of operating on these cases can readily call to mind patients who presented symptoms and signs of a comparatively mild attack of appendicitis, but in whom a gangrenous appendix was found at operation. Kümmell, in discussing the importance of early operation, mentions that out of 237 cases upon which he operated during the first 48 hours of the attack, in 115, nearly 50 per cent., the appendix was gangrenous or perforated.

Then, again, apart from the very small mortality of operations performed during the first 24 hours, a point of great importance is that by operating early and removing the diseased focus the chances of complications supervening are greatly diminished. This is particularly the case with such complications as ileus and the other forms of intestinal obstruction, thrombosis of the femoral veins, pylephlebitis, and so on. For example, if we compare the 1905 series of cases with the present series we find that the number of cases of fæcal fistula has been reduced from 49 to 25, and of thrombosis of the femoral vein from 12 to 4. There were 17 cases of pulmonary complications as opposed to 45 in

1905, and 2 cases of pylephlebitis as opposed to 4. Further, with very few exceptions, all the complications in the present series occurred in patients who, at the time of operation, were either suffering from abscess or from general peritonitis. Another point in favour of early operation, apart from the prevention of such grave conditions as the formation of an abscess or general peritonitis, is the fact that in the great majority of cases it is possible to close the wound and obtain union by first intention.

Lastly, another point—and a point of considerable importance in the prognosis—is the fact that appendicitis is essentially a disease where relapse is the rule and where freedom from recurrence is the exception. And the only cure is treatment by operation. Medical treatment may be successful in tiding the patient over an attack, but the probability that further attacks will supervene is very great. Of 233 cases collected by Karrenstein 50·2 per cent. had further attacks—60 per cent. in the first year, 20 per cent. in the second, and 20 per cent. subsequently. Of 1933 cases Kümmell found that 989, or 51·1 per cent., had had previous attacks. When operation is performed in the early stages of an attack the appendix can always be removed, and thus the possibility of further attacks is obviated.

Bibliography.—Barnard: Brit. Med. Jour., Feb. 22nd, 1908. Bidwell: Ibid., August 27th, 1910, p. 507. Brickner: American Journal of Surgery, 1910, vol. xxiv., p. 208. Carless: THE LANCET, Nov. 20th, 1909, p. 1540. Von Frisch: Wiener Klinische Wochenschrift, 1912, vol. xxv., p. 30. Garré and Quincke: The Surgery of the Lung, 1912, p. 196. Hammersley: New Zealand Medical Journal, 1909, vol. vii., p. 13. Hoffmann: Beiträge zur Klinischen Chirurgie, 1912, vol. lxxix., p. 305. Holländer: Berliner Klinische Wochenschrift, May 30th, 1910, p. 1011. Hunner: Journal of the American Medical Association, April 25th, 1908, p. 1328. Karrenstein: Quoted by Kümmell, Langenbeck Archiv für Klinische Chirugie, 1910, vol. xcii., p. 371. Körte: Quoted by Hoffmann, Beiträge zur Klinischen Chirurgie, 1912, vol. lxxix., p. 305. Kümmell: Langenbeck Archiv für Chirurgie, 1910, vol. xcii., p. 371. Lett: Transactions of the Royal Medical and Chirurgical Society, 1905, vol. lxxxviii., p. 545. McWilliams: Annals of Surgery, 1910, vol. li., p. 909. Oehlecker: Berliner Klinische Wochenschrift, 1910, No. 13, p. 572. Douglas Powell: Transactions of the Royal Medical and Chirurgical Society, 1905, vol. viii., p. 459. Reichel: Quoted by Holländer, Berliner Klinische Wochenschrift, May 30th, 1910, p. 1011. Ruge: Langenbeck Archiv für Klinische Chirurgie, 1911, vol. xciv., p. 711. Sasse: Ibid., vol. xciv., p. 549. Seelig: Annals of Surgery, 1908, vol. xlviii., p. 388. Sprengel: Centralblatt für Chirurgie, 1911, vol. xxxviii., p. 33. Treves: Transactions of the Royal Medical and Chirurgical Society, 1888, p. 165; 1905, vol. lxxxviii., p. 431. Wilms: Centralblatt für Chirurgie, 1909, No. 48, p. 166.

Lower Berkeley-street, W.

TRAUMA IN RELATION TO CERTAIN ASPECTS OF NERVOUS DISEASE.[1]

BY C. M. HINDS HOWELL, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN, GREAT NORTHERN CENTRAL HOSPITAL; ASSISTANT PHYSICIAN, NATIONAL HOSPITAL FOR PARALYSED AND EPILEPTIC, QUEEN-SQUARE; AND MEDICAL REGISTRAR, ST. BARTHOLOMEW'S HOSPITAL.

THE relation of trauma to disease has always been a matter of very considerable interest, both from a practical as well as a theoretical point of view. It is unnecessary for me to emphasise the difficulties which often arise in deciding what part trauma has played in the production of certain morbid conditions. On the other hand, the relationship in many cases is quite clear. Both the importance of the question and the difficulties connected with it have materially increased during recent years, owing to legislation which has been introduced in connexion with the subject.

Probably in no other department of medicine is the influence of trauma in the production of incapacity more pronounced, or harder to estimate fairly, than in its relation to the nervous system. The difficulty arises not so much in connexion with organic disease, which may have been caused by trauma, as in connexion with various functional conditions of post-traumatic origin. Many of these are of a purely subjective character, and human nature being what it is, the tendency to exaggeration has ample opportunity for appearing. This tendency is, of course, exhibited more particularly by individuals of a neurotic disposition, whose nervous system is especially liable to disturbance as the result of accident. In these cases the trauma is as much psychical as physical. It is the duty of the physician to form an estimate of the extent to which the symptoms complained of may fairly be attributed to the injury received, and it is in this respect that so much difficulty arises.

As the relationship of trauma to nervous disease is a very wide one, I propose to select certain aspects only for consideration. As a result of trauma both organic and functional disorders occur in the nervous system. The former bear, as a rule, a direct focal relationship to the injury which caused them, whilst the latter do not. For instance, cerebral symptoms of a functional character may follow an injury to the back, or, again, hysterical paraplegia may follow an injury to the eye. The position of the injury bears no constant relation to the symptoms complained of, except, perhaps, that head injuries are rather more likely than others to give rise to cerebral symptoms.

Head Injuries in Relation to Nervous Disease.

I do not propose to consider the immediate result of severe head injuries, such as concussion or compression of the brain, but rather their remote effects. I will take as illustrations cases that have come recently under my own observation.

CASE 1.—The patient, a man aged 30, gave the following history. Five days before being seen he had been hit on the side of the head whilst playing cricket. He was batting at the time, and the ball hit him on the left temple. He was knocked over and lost consciousness for a few moments. He recovered quickly and was able to finish the game. That night he complained of severe headache and vomited several times. He remained in bed a day or so, but on the fourth day after the accident, when he was beginning to feel well again, he had a fit. Consciousness was not lost, and only the right side of the face was affected. Duration of the attack four minutes. Since the fit he had experienced slight difficulty in expressing himself. He had a second attack later in the day, and a third when I was examining him next day. The attacks were all similar in character and only involved the right side of the face. Examination revealed slight weakness of the right facial muscles and a slight degree of motor aphasia, the patient being often at a loss for a word and his vocabulary being limited. There was no other sign of organic nervous disease. The optic discs were normal and nothing could be felt at the seat of the injury.

From a consideration of the history of the case, in conjunction with the symptoms, a diagnosis of extradural hæmorrhage was made, the site of this being the lower part of the precentral gyrus and the origin of the hæmorrhage the anterior branch of the middle meningeal artery. Mr. Arthur Edmunds saw the case with me, and an operation was performed next day. A depressed fracture was found under the temporal muscle which we had not been able to feel before, and a considerable quantity of extradural clot was found when the depressed bone had been removed. This was removed and the dura opened to make sure that there was no subdural injury. None was found and the wound was closed. The patient made an uninterrupted recovery, and there were no more Jacksonian fits. Some weeks after the operation, however, the patient had a fit in every respect identical with those of idiopathic epilepsy. I did not hear of this till some months after the operation, by which time he had had several more attacks. He had not been put on bromides after the operation, as we reckoned on having

[1] A paper read before the Windsor and District Medical Society.

removed the exciting cause of the fits. This I now think was a mistake, and in any similar case I should certainly advise the administration of bromides for a time after the operation. The patient was put on sodium bromide 20 gr. t.d.s., and there have been no more attacks.

The case will serve to introduce the difficult question of post-traumatic epilepsy. It is often very difficult to decide, though it was not in the case quoted, whether there is any causal relationship between head injury, or indeed any injury, and the subsequent development of epilepsy. I say "any" injury advisedly, as one has to remember that the mental or emotional shock, which often accompanies accident, may be in itself sufficient to produce epileptic attacks in specially predisposed individuals. Another important point which must not be lost sight of is that in a certain number of cases the head injury which may have been regarded as the *cause* of the fits is in reality the *result* of epilepsy, the patient having fallen in a first attack and injured himself. Again, epilepsy is a disease to which a certain amount of stigma is attached by the public. This is thought to be minimised if a definite cause can be found for the fits, any possible reflection on the parents being thereby obviated. Consequently old and forgotten head injuries are "remembered" subsequent to the first attack. This is specially noticeable in the case of children, in whom it is seldom difficult to find some occasion on which the head has been bumped.

The types of epilepsy that may follow injury may be either (*a*) focal or (*b*) general, including under this heading both grand and petit mal. Of these, however, the latter is much more rarely met with than the former. Focal fits, as in the case quoted, are almost always due to local pathological changes. Of these the commonest are depressed fractures, splinters of bone from the inner table, and blood-clot. In cases of long standing meningeal cysts or thickening and cortical scarring may be met with. In a few instances nothing is found at operation to account for the fits.

With regard to prognosis, the result of operative treatment in the focal cases is good if the injury is recent and the brain cortex uninjured, but is much worse where cysts have formed or the cortex has been injured. Where a scar exists in the cortex little good can be expected from the operation, and it is most inadvisable to interfere in any way with the brain tissue. Certain cases of Jacksonian epilepsy are reported from time to time as having been benefited by operation where nothing has been done beyond opening the skull, and in which nothing pathological has been found at the operation. In my experience such cases, if followed up, will usually be found to relapse into the *status quo ante*.

In cases of general epilepsy following head injury it is extremely doubtful if any operation ever does any permanent good. Statistics show that a definite history of trauma is obtainable in only a very small percentage of cases of general epilepsy, and although a few cases seem for a time to have benefited as the result of decompression operation, the improvement is not sufficiently lasting to encourage surgical intervention.

Traumatic Insanity.

In this case, again, there is a natural inclination on the part of relatives to seek for a definite cause for the condition, and blows or injury to the head are often suggested in this connexion. As a matter of experience very few patients can be shown to have become insane as the result of trauma, as Mott and others have clearly proved. It would appear, however, that trauma of one kind or another may be an important factor in determining the onset of mental disease, especially in the case of general paralysis. An instance in which trauma seems to have played a determining part in the development of mental symptoms has recently come under my observation.

CASE 2.—A patient, aged 19, was sent to me by Dr. P. W. Rowland, of Colchester, with the following history. The patient fell from his horse and hit the back of his head against the wooden wall of the riding school. He was dazed, but got on the horse again, and was able to finish the lesson. On reaching home he complained of severe headache, and vomited several times during the night. In this respect his symptoms were very similar to those of Case 1, but the sequel is different. From the time of the accident, so the parents declared, the boy had become morose, suspicious, unable to work, and in addition had developed delusions of persecution. Previous to the accident his mental condition had been perfectly normal. I saw him first about seven months after the accident, when he still complained of occipital pain, but the examination of the nervous system was negative. As he did not improve under treatment I had a consultation with Mr. Rawling, who kindly took him into St. Bartholomew's Hospital, and did a decompression operation. The cerebrospinal fluid was found under increased pressure, but there was no evidence of any gross cerebral lesion. The operation has not improved the mental condition at all, and the boy is now in an asylum.

With regard to the question of advising operation in such cases certain facts must be considered. In a few cases operation has been found to relieve mental symptoms that have arisen immediately following a head injury. In such cases some definite lesion has usually been found at operation, such as depressed fracture, blood clot, and so on. In others nothing has been discovered beyond some increase in the cerebrospinal fluid, with œdema of the meninges. Under the circumstances I think that one is justified in advising operation when sufficient trial has been made of proper medical treatment without any benefit. In the majority of cases the results will no doubt be disappointing, but no harm will have been done provided the operation has been performed by an experienced surgeon. In a certain number of cases good results will occur, sufficiently often in my opinion to justify the operation. One cannot pass on without mentioning the famous American crowbar case, in which dementia followed injury to the frontal lobes. The accident in this case was evidently the cause of the mental change, but one must remember that it had produced a gross cerebral lesion.

Post-traumatic Headache.

Headache of a very intense and intractable type is frequently the result of severe head injury. This symptom is often combined with others, which together make up the clinical picture of traumatic neurasthenia, but the headaches may exist alone. They are as a rule intermittent, localised at the onset of the attack, but later become diffused all over the head. The following cases illustrate the types to which I refer.

CASE 3.—A man, aged 39, had a bad fall when riding, as a result of which he lost consciousness and was convulsed on the left side of the body. He remained unconscious for several days, and later had complete amnesia for the events of the three weeks immediately following the accident. As a result of the accident he became liable to attacks of very severe headache, localised at their onset to the right temple, but after a time becoming diffused all over the head. His memory was affected, so that he was unable to attend to his duties, on which he was very keen. Mental concentration had become impossible, and he found great difficulty in

arriving at any decision, even in trifling matters. As a result of all this he had become very irritable, and was unwilling to see his friends, write letters, or attend to any business. This is a typical example of a severe case of traumatic neurasthenia complicated by severe headaches. Physical examination was negative, but the reflexes were all very brisk.

In such a case it is difficult to decide whether an operation for the relief of the headaches should be performed or not. In cases like this the headaches might be due to some focal lesion in the bone or meninges, or they might be purely functional. Before deciding on operative interference a prolonged course of medical treatment should be undertaken, and the patient put under the most favourable conditions for recovery to take place. Of these, rest in bed for a considerable time after such a severe accident is, in my opinion, a matter of the very first importance, and failure to observe this precaution often results in the subsequent development of symptoms which might otherwise have been avoided. In addition, the use of bromides is particularly desirable. Any attempt to return to work should be forbidden till at least a year after such a severe injury as that recorded above. In giving a prognosis several factors have to be taken into account. Of these the most important are the temperament of the patient, his family history, and his age. The older the patient the more guarded must the prognosis be.

Symptoms of traumatic neurasthenia may be mixed with those due to an organic lesion. The following case illustrates this point.

CASE 4.—An officer somewhere in the sixth decade of life had a very severe fall out hunting, which resulted in fracture of the pelvis and other injuries. He recovered from this, but in the following year had another severe fall when riding, and was picked up unconscious and paralysed from the arms downwards. He was, of course, put to bed, but within a few days regained the power in his limbs. In a fortnight he was up and about again, but then developed symptoms of traumatic neurasthenia of a very pronounced type. He complained of pains in the head of an ill-defined character but exceedingly depressing, "all gone" feelings, which left him prostrate, and amongst other things of severe pains in the arms and hands with some weakness of grip. The latter were probably due to hæmorrhage in the meninges which had no doubt occurred at the time of his accident, the effused blood causing irritation of the nerve roots within the dura. He eventually recovered and was able to hunt again, but it took about 18 months for this to take place.

In the cases related above the injuries were severe in every instance, but you will meet with others in which the physical injury seems quite disproportionate to the symptoms complained of. If the case is one in which damages are being claimed, of course one thinks of malingering, or at least of exaggeration of the symptoms. Without doubt we all have a tendency to exaggerate the importance of our own injuries and to belittle those of other people. Nevertheless, in a certain number of cases where there is no question of damages, a comparatively slight injury has resulted in prolonged nervous disturbance. *The* important thing to study in this connexion is the psychology of the patient. As an example of this let me relate the following case.

CASE 5.—A lady, aged 30, consulted me because of severe sciatic pain, occipital headache, and spasm of the right side of the face. The pain incapacitated her from following her occupation, and she was unable to undertake anything because of the fatigue which followed the slightest exertion. All these symptoms were the immediate result of a railway accident, which had occurred 12 months previously, and for which she had received satisfactory compensation. The accident was a comparatively slight one, and she received no physical damage beyond severe shaking. She herself was very highly strung, and the "psychic trauma" had evidently affected her very much more than the physical injury. The case was further complicated by the fact that she was at the time greatly worried by a private affair, which she had been unable to discuss with anyone, and so was particularly disposed to develop symptoms of a neurosis on very slight provocation. Under appropriate treatment she made a complete recovery. The case, however, is important, as it shows that severe nervous disturbance may result from a slight injury, and that symptoms do not always clear up immediately compensation has been obtained.

Symptoms of traumatic neurasthenia or hysteria do not always follow *immediately* upon the injury that has produced them, as the following case illustrates.

CASE 6.—The patient, a working man aged 45, gave the following history. Whilst working in a motor garage he was pinched between two taxi-cabs and hurt sufficiently to be taken to a hospital, where, however, he was not detained. He remained at home for about a fortnight, after which he returned to work. Shortly after this he began to complain of weakness in the legs with severe pain over the second lumbar vertebra. Within a week he was unable to walk. On examination both legs were found to be very weak, all power being lost in the left, which was also insensitive to all forms of sensory stimulus. Sensation in the right leg was normal. The knee-jerks were greatly exaggerated and the plantar responses were *flexor*. The condition was purely hysterical, and the man made a good recovery, but on returning to work he has relapsed again.

The latent period in this case is interesting, as it might suggest the presence of organic nervous disease, but it is by no means rare in cases of a purely functional nature.

Time will not permit me to do more than refer to the possibility of trauma acting as the exciting factor in the production of certain forms of organic nervous disease. It is possible that trauma may be a factor in exciting the onset of such diseases as progressive muscular atrophy, Graves's disease, paralysis agitans, a neurotic form of glycosuria, and finally new growth of the central nervous system. I have already referred to the onset of general paralysis of the insane being excited by trauma, and tabes dorsalis would probably come within the same category. If trauma ever does produce these diseases, and there seems some evidence that this is so, we can only believe that it acts as an exciting factor and not as the basic cause. It has now been demonstrated without fear of contradiction that both these diseases are syphilitic in origin. The question becomes of importance in compensation cases. The man has the seeds of one or other of these diseases in him, and the injury simply accelerates the onset. It is clearly impossible to say of how many years' health the man has been deprived by the acceleration of his malady, yet he might fairly be allowed some compensation if it can be proved that he was free from either disease before his accident, or so it seems to me. The proof of this would, however, be very difficult.

I have said little or nothing about the difficulty of deciding whether a given case is genuine or not. This question constantly crops up in connexion with compensation cases, and is exceedingly difficult to answer fairly. The various Acts which carry compensation with them have fostered the spirit of valetudinarianism to an appalling extent. Auto-suggestion easily occurs under the circumstances, and the patient takes long to recover. I think that it is rare for malingering pure and simple to be met with. I recently heard a famous French neurologist

declare that it was possible to separate easily the genuine cases from the dubious ones. "Those who evince a keen desire to recover and return to work are genuine, and will soon recover under appropriate medical treatment; those who show no inclination to recover, and make no effort to improve, are malingerers or semi-malingerers." This statement would seem to me to be too dogmatic, but it undoubtedly contains much truth. There can be no doubt at all of the influence of the mind on the body, and where there is no inducement to return to work, or keen desire to do so, the illness will be proportionately prolonged.

Harley-street, W.

THE PERCUTANEOUS TUBERCULIN REACTION.

OBSERVATIONS ON 400 CASES.

BY A. J. BRUCE LECKIE, M.D. EDIN.,
LATE RESIDENT MEDICAL OFFICER, ROYAL MINERAL WATER HOSPITAL, BATH, ETC.

THE percutaneous diagnostic reaction, introduced by Moro and Doganoff, is a modification of the use of tuberculin ointment employed by Spengler as a therapeutic measure. Moro published his observations in 1908, and his method of procedure in June of the same year.

Tuberculin ointment.—The ointment which I employed consisted of tuberculin and anhydrous wool fat, according to Moro's formula This vehicle allows of the greatest concentration, and the lanoline is heated to 20° or 30° C. The ointment keeps well unless exposed to damp, when it decomposes. It is clear brown, transparent, and of characteristic odour.

Application of the test.—Usually the front of the chest was the site chosen, occasionally the abdomen if more convenient. A portion of ointment about the size of a pea was firmly rubbed in by the finger over about 4 square inches, the process taking 30 to 60 seconds; sometimes the skin was previously cleansed with ether. No dressing was applied. Bandelier and Roepke claim better results after cleansing the skin. In some cases simple ointments were used as controls, but without results.

The reaction.—On the area employed, as a rule, nothing can be observed for 12 hours. Usually under 24 hours, preceded by itching, small papules begin to appear, on an average in my cases from 14 to 16 hours. The papules are irregularly scattered and sometimes extend beyond the test area; they may be numerous or scanty. If the papules are well formed they may develop into pustules, with or without an intermediate vesicular stage. They are not infrequently surrounded by a zone of erythema, which may be pronounced and blotchy. The maximum development is attained in about 48 hours. Towards the end of the fifth day the crop begins to fade; the pustular elements dry up and small crusts are formed; the neighbouring skin becomes scaly with desquamation, which varies according to the intensity of the reaction. In a week alone remains a scaly patch with irregular brown pigmented areas. The rapidity of pustulation is more marked in children, whereas in other cases papulation may be the final stage.

Abnormal reactions.—Reactions occurring under 12 hours I have not observed. If, however, delayed beyond 24 hours I regard them as late; several of my cases were delayed until the eighth day. Chlumsky refers to late reactions occurring on the fourth and fifth day. Of my cases 7 gave results on the third to eighth days. Petechial hæmorrhages were present in 4 of my cases; 2 of these cases were tuberculous subjects, 2 being clinically free from the disease. The petechiæ in 2 of these cases were the only evidence of reaction; in the other 2 cases the eruption accompanied them. In 1 case, however, the eruption did not appear until the eighth day; by this time the hæmorrhages had been absorbed. These may be compared with analogous phenomena met with in the cutaneous reaction.

Value of the test.—This test is the most simple and harmless of the tuberculin reactions. Numerous results greatly at variance have been obtained by different observers. Weil prefers this test to the other tuberculin methods; and Moro claims as good results in 338 children as with von Pirquet's reaction, regarding it as equal with the conjunctival test. Von Pirquet failed to get reactions with the ointment in children save in one exceptionally susceptible case. Heinemann considers it as good as the conjunctival test; but Chlumsky places little reliance upon it, obtaining 6 reactions out of 23 non-tuberculous children, whereas only 14 out of 24 tuberculous cases responded. Roepke and Bandelier obtained 54 positive results in 54 cases proved to be tuberculous by either demonstration of bacilli or injection of tuberculin. The latter procedure, however, can hardly be accepted as proof. Verge's experience in lupus led him to claim superiority for this test over injection, but a skin already the site of activity readily responds.

These data will serve for comparison with the results I have obtained in 400 cases. Of this series, 96 cases presented unquestionable signs of tuberculous disease, comprising various lesions. Of these cases 33 reacted, leaving 63 tuberculous cases devoid of response. Out of 304 cases clinically free from the disease 38 gave results; 9 of them were doubtful, 4 of which reacted. There is an unavoidable fallacy in many cases, as clinical freedom is no proof of absolute freedom. In non-tuberculous subjects Moro's experience coincides with my own, fewer results being obtained than with the scarification method. Patterson made similar observations, but regards it as equal in value with the ophthalmic test.

In my series 12 per cent. of reactions occurred in non-tuberculous individuals and only 34 per cent. in subjects of the disease. Fewer results are obtained in tuberculous individuals than with the von Pirquet method, but in non-tuberculous cases there is a striking contrast, 36 per cent. of results being obtained with the scarification method. Females react more readily than males, 80 of my positive results being in females; and children respond more frequently than adults. The age period is also of significance; nearly all the reactions occurred both in tuberculous and non-tuberculous cases under the age of 20.

In pulmonary tuberculosis the results were bad; 34 out of 43 cases entirely failed to respond. In osseous tuberculous lesions only half the cases reacted, although Moro claims particular accuracy in lesions of this nature. The majority of cases of tuberculous peritonitis failed. Out of 21 cases where signs of morbidity were wanting the reaction appeared in 4: but the rheumatic cases did not give the large percentage of reactions which I have observed with the von Pirquet test. All the

cases of enteric fever and pleural effusion gave negative results; 2 of the effusion cases had definite tuberculous signs.

The best reactions are to be found in well-nourished individuals, especially children; here Chlumsky is in agreement. Old-standing cases and old subjects usually fail; this is possibly due to the inability of the skin to react, resulting from either chronicity of toxæmia or from trophic changes in the skin concurrent with advancing years. The greater susceptibility of the female sex points to delicacy of the skin as a factor. I also made observations to ascertain whether fair individuals, as opposed to those possessing a larger share of pigment, were more liable to respond, but no relation exists. It is well established that increase in dose of tuberculin injections may convert a failure into a response; both the skin and conjunctival reactions might give better results if the dose were regulated. Among the tuberculous cases all the positive results except 5 occurred under the age of 14 years, the majority of failures occurring between 15 and 40 years of age.

In order to form a more close comparison between the von Pirquet reaction and the Moro test I applied both in a series of 132 cases. Of these cases 51 were definitely tuberculous, but only 13 out of these reacted to both, and 20 failed to respond to either, but I have never observed a tuberculous case which reacted to the ointment fail also to react to the von Pirquet method. Moro reports a similar experience. Out of my cases clinically free from tuberculosis 6 responded to both tests, 50 failed to react to either. Whereas 23 reacted to the scarification only 2 non-tuberculous cases gave results with the ointment only. These results may be more clearly shown in tabular form:—

132 Cases to which Two Tests were Applied.

Tuberculous cases giving	von Pirquet and Moro reactions	13
" " "	von Pirquet reaction only	18
" " "	Moro reaction only	0
" " "	failing with both...	20—51
Non-tuberculous cases giving	von Pirquet and Moro reactions ...	6
" " "	von Pirquet reaction only	23
" " "	Moro reaction only	2
" " "	failing with both...	50—81

From the above it is clear that the von Pirquet test gives a larger number of reactions among tuberculous subjects than the ointment test, but at the same time it gives a much larger number of false results among non-tuberculous individuals. These two skin reactions are much inferior to the ophthalmic test, which gives a large percentage of true results, whilst reactions in non-tuberculous subjects are not very frequent.

Conclusions.—1. The ointment test is exceedingly inaccurate. 2. It does not give nearly so many reactions in non-tuberculous cases as the von Pirquet test. 3. Most reactions are obtained in women and children. 4. It is of no value in prognosis. 5. It more often fails in tuberculous cases than the cutaneous reaction. 6. Late reactions have no clinical significance. 7. Tuberculous cases which respond to the ointment also react to the von Pirquet method. 8. Pyrexia does not interfere with the reaction. 9. The test is free from danger.

Bibliography.—Bandelier and Roepke: Tuberculin in Diagnosis and Treatment. Chlumsky: Brit. Med. Jour., 1910, vol. i. Doganoff: Wiener Klinische Wochenschrift, 1907, No. 31. Heinemann: Münchener Medizinische Wochenschrift, 1908, No. 11. Moro: New York and Philadelphia Medical Journal, 1908. Patterson: Archives of Internal Medicine, 1909. Verge: Brit. Med. Jour., 1910, vol. ii.

Bath.

A CASE OF POST-OPERATIVE OSTEOMYELITIS OF THE FRONTAL BONE.

RECOVERY AFTER WIDE REMOVAL OF THE DISEASED BONE.

BY W. G. PORTER, M.B., B.Sc. EDIN., F.R.C.S. EDIN.,
SURGEON, EAR AND THROAT DEPARTMENTS, ROYAL HOSPITAL FOR SICK CHILDREN, AND EYE, EAR, AND THROAT INFIRMARY, EDINBURGH.

OSTEOMYELITIS of the frontal bone is not a very uncommon complication of frontal sinus suppuration, but it is an extremely dangerous one. Dr. D. Mackenzie,[1] in a recent exhaustive account of the condition, states that in 20 post-operative cases which he collected he had found no case recorded in which the patient had recovered; while in spontaneous cases the results were not so bad, 7 having recovered out of 21 cases after appropriate surgical treatment. The following case is, so far as I know, the first post-operative case in which recovery has ensued, and it accordingly seems desirable to give a somewhat detailed account of it.

The patient, a married woman aged 46, was referred to me from the Eye Department of the Edinburgh Eye, Ear, and Throat Infirmary by Dr. J. V. Paterson. She complained of double vision and a swelling just above the right eyeball towards the external canthus, and there was also definite proptosis. After examination a diagnosis was arrived at of empyema of the right frontal sinus and ethmoidal labyrinth, with orbital abscess.

Killian's operation was performed on May 14th, 1912. The frontal sinus was found to be filled with creamy mucopus (pure culture of hæmolytic long-chained streptococcus obtained), but the lining membrane was not thickened; hence it was thought that the case was one of infected mucocele. The floor of the sinus had given way rather far back, and pus was lying on the orbital periosteum, which at this spot was covered with granulations; there was a very well-marked orbital extension—it was fully an inch and a half in depth. In smoothing off the bone close to the inter-sinus septum the latter was unfortunately cracked, exposing the sinus on the opposite side. The wound was entirely closed and healed by first intention. Three weeks later the upper eyelid became œdematous; the wound was reopened and a quantity of pus evacuated. The discharge continued in spite of the administration of an autogenous vaccine and of endeavours to obliterate the sinus by pressure.

A second operation was performed on Oct. 3rd, 1912. The inner end of the bridge was removed, and a sinus was traced to the hole in the septum, where pus was seen coming from the left frontal sinus. The outer part of the right frontal sinus was obliterated by dense fibrous tissue, as was the opening into the nose. A Killian's operation was thereupon performed on the left frontal sinus, which also had a deep orbital extension. The inner part of the incision was left open after the operation, sutures being passed, but not tied for 48 hours, there being then no discharge. The wound healed at once, but a few days later the upper eyelid became swollen, and pain was felt at night; there was, however, no pyrexia.

On Nov. 11th the swelling became more marked, and there was great tenderness on pressure over the bridge. The wound was reopened; the inner end of the bridge was divided, and it was then found to be loose, a sequestrum being removed which consisted of the outer end of the bridge and the upper margin of the orbit external to it. (Fig. 1.) No pus was evacuated. The wound was left freely open and loosely packed. The pain was not relieved by the operation and the upper eyelid remained swollen. The temperature varied between 98·4° and 99·2° F.

On Nov. 17th œdema of the skin was noted over the frontal sinus; this spread rapidly, and on the 20th extended up to the hair margin and across the middle line; there was, however, very little discharge from the wound, which was still kept widely open. It was believed that osteomyelitis had set in, and wide removal of the frontal bone appeared to

[1] Journal of Laryngology, January, February, and March, 1913.

offer the only hope of recovery. Dr. A. Logan Turner, who very kindly saw the patient with me in consultation, concurred in the diagnosis and in the proposed treatment. Accordingly, on the following day a mesial incision was made upwards from the root of the nose, and a triangular flap of skin and periosteum turned back. The bone appeared glazed on the surface; a large circle of bone was removed with hammer and gouge; the bone was about half an inch thick, very soft and vascular, and did not give the usual ring when struck (Fig. 1). The margins of the bone were further removed with bone forceps until a firmer consistence and diminished vascularity appeared to show that the limits of disease had been reached. There was no pus in the substance of the bone, and the dura appeared healthy. The skin flap was then replaced and fixed in position by a few interrupted sutures. There was considerable discharge from the wound for some days; the pus was examined, a staphylococcus pyogenes aureus isolated, and an autogenous vaccine made. Healing gradually took place, and was undoubtedly assisted by the administration of the vaccine. Five doses were given in all, increasing from 50 to 400 millions, the first being administered on Nov. 26th and the last on Jan. 6th, 1913. The patient had no further trouble in the operation area, and she

FIG. 1.

The larger portion of bone was removed at the last operation, the smaller portion was a sequestrum; it is bounded on the left by two bays of the frontal sinus. Both portions are placed as they were in the body. The inch scale on the left shows the size.

remained in excellent health until Nov. 19th, when she had an attack of pneumonia which carried her off in a few days. The photograph of the patient (Fig. 3) was taken a month after the wound had healed: it hardly brings out the marked flattening on the left side of the head. This was concealed by a wig when going about.

A small block of bone was taken for microscopic examination from the large piece removed at the last operation. I am indebted to Mr. John Fraser, assistant surgeon to the Royal Hospital for Sick Children, Edinburgh, for having prepared the sections, which were cut from the block after it had been decalcified and embedded in celloidin, and I take this opportunity of thanking him most heartily for his valued services. The sections (Fig. 2) were submitted to Dr. Theodore Shennan, pathologist to the Royal Infirmary, Edinburgh, and I am also most grateful to him for the trouble he has taken in examining them and for the following report which he has very kindly given me:—

"The spaces in the bone in parts are wide, in others very small. There has probably been some absorption in the case of the larger. In some parts there is definitely a deposit of a thin layer of bone on the inner surface of the spaces, and a common feature is the presence of a regular layer of osteoblasts in this situation. The fat in the marrow is of small amount, being represented by only a few fat cells in any one space, and in some spaces the fat has altogether disappeared. It has been replaced by young vascular connective tissue consisting chiefly of long fibroblasts, the long axes of which are arranged parallel to the surface of the space. This

FIG. 2.

Photo-micrograph of section of bone.

young connective tissue is found chiefly round the periphery of the space, the central part being full of cells, chiefly polymorphonuclear leucocytes, but there are also large mononuclear cells of the granular series and occasional giant cells with convoluted nuclei, apparently myeloplaxes. From the general arrangement of the polymorphs, I am inclined to regard them as infiltrating the tissues rather than inducing

FIG. 3.

Photograph of upper part of patient's head after recovery.

a local bone marrow reaction (though this cannot be excluded by these celloidin sections), and the condition as being one of chronic osteitis with a recent more acute exacerbation."

Remarks.—There can, I think, in this case be little doubt as to the accuracy of the diagnosis, at any rate as judged by the clinical phenomena. The picture was indeed typical of osteomyelitis in its early stages; the classical sign of osteomyelitis was present—namely, œdematous swelling beyond the confines of the sinus, while the onset was also

highly suggestive—first, the appearance of a superficial swelling of part of the external wound, its slow extension, and, after the opening of the wound, the character of the swelling around it, which was pale, puffy, and œdematous.

The pathological evidence was perhaps less conclusive. To the naked eye the bone was thickened—this is well brought out in the illustration; the diploë was markedly hyperæmic, but there were no drops of pus in it; while the histological appearances were not those of a rarefying osteitis, as Dr. Shennan shows, but rather of a chronic osteitis with an acute recent exacerbation, and I am myself inclined to think that this acute exacerbation, which is evidenced by the cellular infiltration, must have been synchronous with the clinical appearances which were so suggestive of osteomyelitis.

If we accept the diagnosis the question immediately arises, Why did the patient recover? This, I think, was due in part to the infection being probably of a very mild type, as evidenced by the very slight degree of pyrexia, and in part to the fact that when the diagnosis was made the necessary surgical interference was promptly carried out, and the bone was removed beyond the apparent confines of the disease. The administration of the vaccine also aided in this happy result. This part of the treatment was carried out for me by Dr. J. Struthers Stewart, who also prepared the vaccines, and to whom I take this opportunity of acknowledging my indebtedness. He has kindly handed me the following remarks: "In connexion with the treatment of this case with vaccines there are several interesting points. 1. When the disease was confined to the frontal sinus vaccines had little effect in promoting healing, even after operation, although they undoubtedly helped to combat the general infection, as was shown by the diminution in temperature and pulse-rate. 2. When the disease spread to the bone, which with its rich blood supply was in a position to make full use of circulating antibodies, the curative effect of the appropriate vaccine was very marked not only in the general condition but also in the wound itself, healing by the formation of healthy granulation tissue taking place rapidly, accompanied by a great diminution in the amount of pus."

I have refrained from entering into the literature of this subject, as all the previously recorded cases have been recently collected and discussed by Dr. Dan Mackenzie in the paper already referred to.

Edinburgh.

A CASE OF ACUTE TETANUS WITH RECOVERY.

BY V. E. NEGUS, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON TO KING'S COLLEGE HOSPITAL.

THE patient, a healthy young man, 19 years of age, was admitted to King's College Hospital on March 26th, 1913, with a compound fracture of his left tibia and fibula about four inches above the ankle-joint and an extensive lacerated wound of the soft parts. He had been flying in a monoplane on March 23rd and his machine struck the ground after diving from a height of about 60 feet. He was removed to a local hospital and the bones were wired together and the wound partly stitched up.

The patient was brought to King's College Hospital three days later and the wound and surrounding tissues were found to be œdematous and the discharge offensive. On March 27th the patient was anæsthetised, all stitches were removed, and the wound was cleaned out as thoroughly as possible and left open, the leg being fixed in a box splint. The temperature that night was 101·2° F. and the pulse-rate was 120.

On the 28th the patient was seen by Sir Watson Cheyne, who removed the wires and cleaned out the wound as thoroughly as possible, establishing thorough drainage. The wound was sloughing and the bones were in bad position; they were therefore fixed by a Lane's plate. On the evening of this day the temperature fell to 99°, and remained so until the afternoon of the 30th. The general condition was good, except that the patient complained of indefinite pains in various parts of the body, chiefly in the lumbar region of the back, and also of shooting pain in the left leg. On this afternoon (the eighth day after the accident) the patient complained for the first time that he could not open his mouth well while taking his tea, but there was no actual rigidity of the masseters; there was still pain in the back and the temperature rose to 100·2°.

On the next morning (the 31st) the rigidity of the masseters was quite definite and there was some risus sardonicus and also some rigidity of the muscles of the neck, with consequent head retraction; the pain in the back was still present and was accompanied by some rigidity of the quadratus lumborum; there were no convulsions; the temperature was 100°. To relieve the pain 20 grains of chloral were given by the mouth; this dose was repeated every four hours until the next midday. On April 1st the symptoms of tetanus were quite definite and 10 c.c. of tetanus antitoxin were injected under the skin of the abdomen at 1.30 P.M. Smears taken from the wound showed the presence of tetanus bacilli, and cultures were also grown subsequently. At 5 P.M. on the same day a general anæsthetic was administered, and 5 c.c. of antitoxin were injected by Dr. W. d'Este Emery by lumbar puncture, and another 5 c.c. were introduced into and around the left great sciatic nerve at the upper end. As the patient was recovering from the anæsthesia there was marked masseteric spasm and also contraction of the muscles of the neck and back; the tongue was bitten, but the spasm was overcome by deepening the anæsthesia again. The evening temperature was 98°.

On April 2nd all the symptoms were more marked, and in view of the fact that the incubation period had been as short as eight days, and that there was a very extensive wound from which continued absorption would take place, Sir Watson Cheyne decided to amputate the leg. This was done at about 4 P.M. in an isolation ward, where the patient was afterwards kept. The anæsthetic was administered by the intravenous method, 1½ drachms of hedonal and 5 c.c. of ether being given in 1½ pints of saline solution. The skin was purified with ether soap, a mixture of 1 in 20 carbolic acid with 1 in 500 perchloride, and finally dried and painted with tincture of iodine; the wound was carefully covered up. The limb was amputated above the knee by a Lister's operation. At the end of the operation Dr. Emery injected 11 c.c. of antitoxin by lumbar puncture. Saline was given per rectum after the operation, but was returned; there was only slight shock and the temperature that evening did not rise above normal. The effects of the hedonal wore off at about 2 A.M., and pain and rigidity returned with a spasm at 4.20 A.M., in which the teeth were clenched, the head was

retracted, and the back arched, lasting for a few seconds. At 4.45 a drachm of chloral in 4 drachms of saline solution was given rectally, and this was repeated four-hourly during April 3rd, with the addition, at 11 P.M., of 5 minims of morphia and atropine; 10 c.c. of antitoxin were also given subcutaneously.

At 7 A.M. on the 4th the patient was comatose from the effect of the chloral, which was given for the last time at 6 A.M. He had had in all 2 drachms by the mouth on the 1st and 2nd, and 1 ounce by the rectum on the 3rd and 4th. There were two bad spasms at 7 A.M. and 9.30 A.M. At midday on the 4th he was still semi-comatose, and as his pulse was small and irregular and his breathing was shallow, and his muscles were not rigid, he was given 4 minims of strychnine and inhalation of oxygen bubbling through absolute alcohol. In the evening his pain returned and he was given 10 grains of aspirin and later 10 grains of potassium bromide. His temperature rose to 102° and there was some incontinence of urine.

On the 5th, after a restless night, the patient had a general spasm at 11.30 A.M., with cessation of respiration and some opisthotonos. He was immediately given chloroform on a mask and also oxygen bubbling through alcohol. At 12.30 P.M. and 4 P.M. there were two slight spasms. At 7 P.M. paraldehyde was given rectally, 3 drachms in 4 ounces of saline, and again at 11 P.M.; later, at 12 midnight, he had 20 grains of potassium bromide, and at 2.30 A.M. 5 minims of morphia and atropine.

On the 6th the patient had general spasms at 12.30 P.M., 12.45 P.M., and 2.30 P.M.; the last was a very bad one with complete cessation of breathing; chloroform was given at once. In the afternoon at 4 o'clock 3 drachms of paraldehyde in 2 ounces of saline were again given, and were repeated at four-hourly intervals; 30 grains of potassium bromide and 5 minims of morphia were also given during the day, and at 8.15 P.M. 10 c.c. of antitoxin were given intravenously.

On the 7th the paraldehyde was continued, as there were great rigidity and intense pain. There was a slight general spasm at 12.45 P.M., a bad one at 1.45 P.M., a slight one at 2.15 P.M., and a very bad one at 2.30. Each time chloroform and oxygen were given, and at 3 P.M. 5 c.c. of paraldehyde and 5 c.c. of ether in 5 ounces of saline were infused intravenously in the arm. At 4.30 P.M. there was another bad spasm, and at 7 P.M. 22 grains of hedonal in 8 ounces of saline were given intravenously, but as unconsciousness was not produced this was followed by chloroform anæsthesia and the injection of 10 c.c. of antitoxin by lumbar puncture. The temperature went up to 102°, but the patient's general strength was fairly good; he had swallowed during the day 1 drachm in all of potassium bromide (10 grains in 1 ounce of water).

On the 8th the patient was somewhat better and was able to take a little liquid, although his teeth could not yet be opened; up to now he had had only milk and soda and some meat juice as nourishment, as rectal nutrients were not retained, and in giving them there was the fear of upsetting the rectum and preventing the injection of drugs by it. During the day he had paraldehyde at 1 A.M., 4 A.M., and 7 P.M., and in the afternoon he started 3 minims of morphia every three hours and 10 grains of potassium bromide three-hourly also, the two alternating. During this day 14 minims of morphia, 30 grains of potassium bromide, and 10 drachms of paraldehyde were given; in the evening he was lightly anæsthetised with chloroform for an hour on account of intense pain; he had some diplopia in the evening. He was not given paraldehyde after this day, and had had in all on the 5th, 6th, 7th, and 8th 34 drachms.

On the 9th the patient again seemed better and was able to open his mouth sufficiently to take a little fish, but was unable to swallow it, and he therefore went on with liquid food, of which he was able to take quite sufficient. He was not given any hypnotics, but had oxygen for 10 minutes twice and 6 ounces of champagne during the day; in the evening he had a slight spasm and was given 3 minims of morphia. His temperature was 101° and his pulse 116.

On the 10th there was considerable pain in the neck and also inability to swallow, and therefore five minims of morphia hydrochloride were given. The amputation stump was looking fairly healthy, but the skin had gaped slightly, and from a culture of it staphylococcus albus was grown. The temperature had dropped to normal and remained so for the rest of the illness; the pulse, however, was 120 and kept up a rapid rate, gradually decreasing to 100 on May 19th, when the patient left the hospital.

On the 11th progress was well maintained, and no hypnotic was used until the evening; as there was still marked rigidity and only very slight opening of the mouth it was considered advisable to give heroin, and this was used in 1/12 grain doses four-hourly for the next three days.

On the 12th there was a bad general spasm at 7 A.M. in which the head was retracted, the spine curved, and the jaw fixed, with several minutes of cyanosis. Chloroform and oxygen were immediately given, and the patient recovered, and later in the day 6 c.c. of antitoxin were given by lumbar puncture, making a total of 67 c.c. during the illness. This was the last spasm, and recovery gradually took place with slow relaxation of the rigidity and diminution of the pain.

On the 14th the four-hourly dose of heroin was decreased to 3 minims, but on the 15th the pain necessitated a return again to 5 minims (1/12 gr.) which in the afternoon was again reduced to 3 minims, and this was continued until 2 P.M. on the 22nd. From the 11th to the 22nd inclusively 204 minims of heroin were given.

On the 20th a little chicken cream was taken, and gradually it became possible for the patient to swallow solid food. The oxygen and the champagne were continued until the 23rd, when the patient was removed to a general ward.

It was necessary to operate again on May 7th, as the end of the femur had penetrated the stump, owing to violent contractions of the muscles; a piece of bone about three inches long was sawn off and the muscles and skin were brought together over it. Pain, which was now chiefly felt in the stump and also referred to where the toes had been, gradually disappeared, but necessitated considerable doses of morphia, replaced at times by distilled water.

The patient left the hospital on May 19th with no symptoms except occasional shooting pain in the stump, and has since been able to drive about in a motor-car.

He has had an artificial leg made, and states that he intends to fly again.

I am indebted to Sir Watson Cheyne for permission to publish these notes.

VACCINES FROM THE STANDPOINT OF THE PHYSICIAN.[1]

BY THOMAS J. HORDER, M.D. LOND., F.R.C.P. LOND.,
ASSISTANT PHYSICIAN, ST. BARTHOLOMEW'S HOSPITAL.

I. *Introductory.*

I FULLY endorse the opinion of the council of this section that the time has arrived when the subject of vaccine therapy may be usefully discussed by its members. It is natural that conclusions drawn from the experiences of the physician should be arrived at more slowly than conclusions drawn from the laboratory researches of the bacteriologist. Without being invidious, I think these slower conclusions are likely to be more sure. I will venture to say that as the physician is more free from theories, provided he is also free from prejudice, he is the better judge of practical results. The physician is face to face with the patient throughout the treatment of his disease; he is the direct witness of the struggle and of the issue. Surely the final verdict must be his? If this is true it is, then, equally true that to occupy this high judicial position in respect of so important a matter as we are to-day discussing implies a responsibility none the less high. It behoves us to throw away all bias and to exercise our best judgment after a thorough trial of the matter under consideration. As I said, I think the physician has now had time to test the new therapeutic agent and should be able to speak with some degree of assurance of his results. He is no longer hustled by those who at one time accused him of gross neglect, as though he were deliberately refusing to his patient the benefit of a remedy of proved usefulness; nor is he to-day ridiculed by others who pointed to him as the one stumbling-block in the real advance of scientific medicine. These and other similar errors of judgment have now even less than a historic interest in the growth of specific therapy. That sudden intrusion of the skilled bacteriologist into the sphere of clinical medicine was a sight as pathetic as would be the invasion of the bacteriological laboratory by the physician. The difficulty was only a temporary one, and has been settled in the only way that was ever possible in the patient's interests—by a frank coöperation between the laboratory and the clinique. This partnership yields results that bid fair to stamp it as the final and satisfactory solution of the problem.

II. *Recent Growth of Vaccine Therapy.*

Freed from the incubus under which it first laboured—the hypothesis of the opsonic index—there has been an immense increase in the amount of vaccine therapy undertaken during the past five years. It is uncertain if we may conclude anything from this change in medical opinion in favour of the new remedy. At first sight the growing popularity of inoculation treatment amongst practitioners suggests that its utility is thereby demonstrated. But on a further view we become aware of the fact that to a large extent this accession of practical interest on the part of the doctor is due to the forcing of his hand by the patient. This, and a natural desire not to be left behind, may be responsible for much of the increase in the bulk of vaccine therapy as seen to-day, rather than honest conviction based upon personal experience. Just as hundreds of us joined the vogue for soured milk in the treatment of intestinal dyspepsia a few years back, and hundreds of us join the vogue for treating constipation by paraffin to-day, for reasons of necessity rather than conviction, so many of us inoculate our patients because it is expected of us rather than because we feel it is the best way to cure them. In short, inoculation treatment is fashionable—it has "caught on" with the public—and it does not yet appear what the permanent place of the therapeutic measure will be. It must be confessed that a large amount of vaccine therapy is of the most discursive and slipshod kind; so desultory and unsystematised is it that it must be wholly excluded from any analysis made for purposes of assessing the results of the method in treatment.

III. *Three Grades of the Remedy.*

It was inevitable that the growing demand for vaccines at a price which put them within the reach of patients whose means could not permit accurate bacteriological diagnosis and the preparation of an autogenous vaccine would lead to the supply of "stock vaccines." And in the course of time it was manifestly desirable that the stock vaccines should be prepared with a view to their being "polyvalent"—i.e., that they should be made from a mixture of strains of the particular micro-organism concerned. In addition to the legitimate sphere created for such preparations by the patient's status, there is an actual necessity for them in certain cases of infection in which no material is available for the purpose of autogenous vaccine, but in which experience makes the nature of the infection highly probable. Stock vaccines are also required for prophylactic purposes. The latest demand has been for the addition to the list of vaccines of substances of more questionable value, and chemists now supply stock preparations which are mixtures of the endotoxins of several different micro-organisms: we have arrived at "phylacogens." This is a frank submission to the fact that there are many medical men who feel that something should be injected into their patients, but that beyond this they are not prepared to go. To what degree this submission prostitutes the main principles of vaccine therapy, or whether, after all, the practice of using such substances may not be quite reasonable in the present state of medical training, is perhaps a fit subject for our discussion. The use of phylacogens clearly demonstrates one thing—that the fear of ill-effects from the introduction of microbic poisons into the system has to a large extent died out, both in the mind of the patient and of the doctor, and this must apply as well to the micro-organism which is, as well as to those that are not, causing the disease.

We note, therefore, that the evolution of vaccine therapy has led to the production of three grades in the particular instrument made in the bacteriological workshop: autogenous vaccines, stock vaccines, and "phylacogens." That these three grades correspond with three degrees of efficiency there is very little doubt, and in estimating the good effects of vaccine therapy it is obviously unfair to attach any importance to failures following the use of the third grade of preparation, which must be regarded as one of the gambles of science, the hit or miss of medical practice. Even the results of the stock vaccines should not be too closely regarded in judging this question. The merits of vaccine therapy as a

[1] Being the introduction to a discussion at the Medical Section of the Royal Society of Medicine on Jan. 27th, 1914.

curative measure rest almost entirely upon the results obtained by the use of the first grade of preparation—upon autogenous vaccines conscientiously prepared after a full investigation of materials obtained from the patient with scrupulous care.

IV. *Too Much must not be Expected.*

It is probably not too much to say that in a number of diseases of undoubtedly infective origin the limitations of the vaccine method as at present known have been reached and fully demonstrated. By no arrangement of dose or of interval that I have been able to devise has it been possible to free the urinary tract from B. coli in old-standing cases of chronic infection by this micro-organism, nor the bronchial tract from its mixed and changing flora in chronic bronchitis. But against this should be set the fact, for I believe it to be a fact, that when all that is possible has been done in the way of non-specific measures in the treatment of these affections, the careful use of a systematic course of vaccines leads, in the majority of cases, to a definite further improvement in the general condition, and to a less extent in the local defect. No doubt the difficulty is largely one of drainage; in chronic colon bacillus infection of the urinary tract it is not often a simple cystitis with which we have to deal: vesical sacculi, the prostatic crypts, and the kidney pelvis afford continued refuge for bacilli; and in chronic infection of the bronchial tract there is often a diffuse dilatation of the tubes, if there is not actual bronchiectasis. Effective drainage is of greater fundamental importance in such diseases as these than the most ingeniously arranged course of vaccine therapy. Some time ago I outlined with some care a full programme of treatment in a tedious case of bronchiectasis, and the programme included a course of vaccines prepared against the dominant elements of the flora present in the sputa at the time. Three months later I saw the patient again and shared the pleasure he himself expressed at his improved condition. It was doubtless a salutary thing for my humility to know that, having been compelled to defer his treatment on account of a temporary change of residence, the only point he had observed in my programme, and that very religiously, was to adopt a certain posture I had shown him for half an hour each day during his morning cough.

Too much uniformity of results is often expected from vaccine treatment. The sceptic should remember the complexity of the causal factors in so many infective processes and the variations even in the natural course run by them. He should also remember the difficulties there are in ensuring the proper co-relation of the vaccine used with the pathological condition under consideration. Finally, he should not be over hasty for results. Patience is necessary in order to determine the best mode of calling out the specific response. A bias against vaccines diminishes the physician's chances of success; he is apt to make one of two mistakes: he either proceeds with such unreasonable caution that there is no assurance at any time that he is dealing with more than subminimal doses, or he pursues a too rigid adherence to a particular scheme of dosage and of intervals which has been laid down as a tentative guide rather than as an inviolable law.

V. *Difficulty of Assessing Results.*

The therapeutic argument is probably the most difficult with which we have to deal in connexion with all diseases. In connexion with infective processes it is perhaps more difficult than in any other condition, for two reasons. Most infective processes are capable of spontaneous recovery, and in the majority of them we are doing other things to assist recovery besides giving vaccines. Both of these facts are freely quoted as evidence against the utility of vaccine therapy. And it may be allowed that single instances of recovery after the employment of vaccines in any disease would count for nothing in the experience of any of us. It is only when we see repeated instances of benefit directly following the use of inoculation in cases which had previously remained stationary or had been losing ground that we realise the results are *propter* and not merely *post hoc*. When we have employed all the other measures that are available and the net result is, perhaps, some gain which the patient slowly dissipates, or perhaps no gain at all; and when we then add the specific stimulus of an appropriate vaccine, and witness a specific response that leads to further gain of a definitely progressive sort—it is then that we feel it is right to say that the progress is due to the vaccine. And when such a sequence is repeated again and again in our experience our conviction becomes confirmed and definitely established.

The failures of vaccine therapy are probably more numerous than its successes. I think this is probably true, even if we discard as worthless for analytical purposes a list of instances in which the diagnosis or the bacteriological technique, or both, were faulty. Yet this fact does not of itself prevent my saying that I think we have in vaccine therapy a weapon of enormous value in the war we wage upon the causes of infective diseases. I am confident that the seeing eye can detect quite clearly, here and there, innumerable instances in which the patient has made a specific response to his inoculations, and has thereby been cured of his infection. It is as though one wandered up and down a long passage into which many locked doors opened, carrying a key and trying the doors with it. Many refuse to open: the key does not fit. Then there comes one where the key turns smoothly and the door opens easily. This accurate fitting of lock and key illustrates the specific stimulus and response of a vaccine given in a successful case. The question we are discussing is, primarily, Does any key fit any door? A secondary question will be, How frequently are we able to find the proper key? I have no doubt myself as to the efficacy at times of vaccine therapy. I am as disappointed with results in the mass as most others are. But the primary question is of much greater importance than the secondary because it involves a principle. The secondary question may be answered more satisfactorily as time proceeds and newer methods are introduced. With all the activity shown in vaccines during the past ten years it must be remembered that a great deal of it, as already remarked, has been too crude to serve as a basis for comment.

VI. *Factors Counting for Success.*

In exchange for a frank admission that I consider vaccine therapy a most valuable addition to the physician's powers, I may perhaps be allowed to say that I think this value is in direct proportion to the care and judgment bestowed upon the diagnostic problem. Every therapeutic measure is able to earn an evil reputation if it and the disease process are ill-adjusted. This is no more the fault

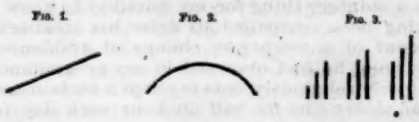
of the remedy than is an evil reputation earned by the same measure because a fanatic regards it as a panacea when in reality it has only a limited application. If, then, I recount the factors which I regard as leading to success in vaccine therapy I shall speak first of—

1. *Choice of case.*—In the matter of the nature of the micro-organism concerned in the disease I have little to say. I think experience shows that the nature of the microbe matters little compared with the nature of the disease process. But even here, though the results in different processes differ widely, I am prepared to give vaccine therapy a trial, and I expect to get some degree of result, whether the process is chronic or acute, localised or general. What *does* matter is that the process shall be one of proved infection. To isolate a micro-organism from some part of a patient's body and to assume that his disease is therefore due to its activities is only the baldest of surmises. This, in the sphere of diagnosis, is the analogue of "phylacogen" in the sphere of treatment. The microbe found may or may not be pathogenic to the patient, and one or other of the vaccines in the mixture used may or may not be specific for the infecting microbe. The diagnostic argument must be much fuller than this; considerations of pathogenicity include the biochemical characters of the microbe, perhaps its effects when injected into animals, tests to determine its reactions with the patient's blood, some quantitative estimate in regard to it, evidence of pathological changes at the site of its discovery, and the constancy with which it is present in the patient and in controls. All of these criteria cannot, of course, often be obtained, but some of them are always forthcoming if care be exercised in the various methods that are at the joint disposal of physician and bacteriologist. Any considerable degree of knowledge as to which micro-organisms most commonly occur as causes of particular infections can, of course, only be gained by experience, and here again the single experience either of bedside or of laboratory is apt to mislead. It is not uncommon to see the most laudable methods wasted and the most reasonable hopes abandoned because the physician does not know that the vaccine he is using is prepared from a microbe which is incapable of producing the lesions of the disease under treatment. Freer discussion with the bacteriologist would perhaps have saved all concerned from disappointment. It is not too much to say that one can sometimes forecast failure for the very reason that the nature of the vaccine used so lacks conviction in its relationship to the disease process.

2. *Isolation of the causal microbe.*—To the proper collection of infected material too much importance cannot be attached. It behoves the physician to acquaint himself thoroughly with the methods of doing this. It is of sufficient importance to do it himself and not to relegate it to the patient or even to the nurse. There is a feeling abroad that, provided certain precautions in the collection of material are given, the actual procedure cannot go wrong. This is a fallacy which leads to many errors and increases difficulties that are quite sufficient already. In the case of the urine in a woman, to name a common example, it is not enough that the specimen should be obtained by catheter and allowed to run directly into a sterilised flask; the catheter must be passed with more aseptic precautions than even a trained nurse can be expected to possess. Indeed, a bacteriological training is the only thing that ever teaches any of us properly the ubiquity of micro-organisms, whether we are physicians or surgeons or nurses. The material collected must come from the actual lesion under investigation and not from surrounding parts, where often secondary infections, relatively unimportant, are present. The material collected, again, must be dealt with as promptly as circumstances allow, and the warmer the temperature at the time the more important this is. Many of the failures of vaccine therapy are failures in eliminating contaminations rather than failures in real trials of the method.

3. *The preparation of the vaccine* scarcely falls within the scope of this discussion, and I doubt if it matters much whether the material is prepared by heat or by autolysis or by the use of antiseptics. Of *sensitised vaccines*, however, I should like to say that I am quite convinced of their superiority to ordinary vaccines in the treatment of acute and of generalised streptococcal infections, having seen them successful when the older method has failed of a result. In the use of *live vaccine* I have had no experience.

4. *The question of dosage and of interval* is very important, although our knowledge is probably at present quite inexact as to both of these factors. We are guided by tradition and personal experience. The range of effective dosage without producing untoward results is probably quite considerable in man, as I was able by experiment to demonstrate is the case in animals. It must be so, seeing that different workers give doses of the same vaccine in widely varying numbers and report equally good or equally negative results. Of the various systems of dosage the graduated system seems to have proved the favourite, beginning with a (presumably) subminimal dose and increasing to a dose beyond which it is thought or found that ill effects follow. This is the method I have found most generally useful in chronic infections. (Fig. 1.) In chronic infections that tend to recur (e.g.,



furunculosis) I prefer to graduate the doses in the reverse order also. (Fig. 2.) In acute infections my experience favours a steppage system of dosage (Fig. 3), giving three doses of increasing size at short intervals, followed by a pause, the second series beginning with the intermediate or final size used at the first series, and so on. I think this serial dosage is also the most useful in employing sensitised vaccine in acute affections. As regards the intervals between the doses, I usually allow the traditional seven to ten days in chronic cases, and 24 to 48 hours in acute cases, with pauses that are determined by the course of the disease and by the apparent effects produced.

5. *Cautions to be observed* include relative rest of the patient and of the affected part for at least 24 hours after the inoculation, and the omission altogether, or the reduction in size, of any dose that is due if the patient suffers undue fatigue, a chill, a menstrual period, undertakes a long journey, or suffers an exacerbation of the condition for which treatment is being given. It is very doubtful if time is ever saved by hurrying; it is

certain that time is often lost by it. I feel convinced that I have several times seen patients rendered hypersensitive to a vaccine by unwise persistence, and requiring lengthy intervals before even small doses could be resumed.

6. *Attention must be paid to all the non-specific points in treatment* just as though the patient were not having vaccine treatment to supplement them. The general condition of the patient is a factor of great importance in getting the best effect from a vaccine; for this reason no therapeutic measure bearing on the state of the blood, nervous system, and general nutrition should be neglected. The response to a vaccine is a specific response, which we are unable by any other known stimulus to produce. All the same, this specific response is more likely to ensue, and ensue more effectively, if the patient's tone is good than if it is bad. Our object is not to see from what depths we can raise the patient by the miracle of a specific stimulus, but rather to supplement those general measures that have already raised him to a certain level, at which he now remains, until the extra leverage of the vaccine completes the process.

VII. *On Certain Problems that Remain.*

I have referred to the fact that certain *limitations* are demonstrable in the use of vaccines as prepared and administered according to our present knowledge. These limitations have already got far beyond anything that the sponsors of the method foresaw at its birth. No doubt we shall hear of several in the course of this discussion.

There are other problems that call for consideration. There is the problem of *recurrences*. A first result of vaccine therapy is often good, may even be brilliant, but cannot be relied upon a second time or, if obtained then, fails at the third trial, even though the method is exactly repeated and the bacteriological diagnosis is carefully revised. What happens here? Is it nothing more than we see in a good many diseases treated on non-specific lines—as in phthisis, for example, where the first chance is a good one, the second doubtful, and the third rarely worth having at all? If so, the problem is not a new one. But the question arises whether we have in some way exhausted the patient's available response to specific stimulation by this particular method.

Then there is the problem of the *generalised infections*, and especially of *malignant endocarditis*, in which, as yet, the results of vaccine therapy, including sensitised vaccines, give us such sparse results. Occasionally in streptococcal septicæmia a few doses of sensitised cocci produce a result which is little short of magical, and now and again a pneumococcal case, similarly treated, gives almost as brilliant a result. But for the most part these cases do not yield; for some reason unknown to us the key does not fit the lock.

There is also the problem of *typhoid fever*, in which, though assistance is undoubtedly rendered in very severe cases by vaccine, the course of an ordinary case is not, according to my experience, shortened or modified.

Harley-street, W.

ROYAL SANITARY INSTITUTE.—The following medical practitioners have been elected members of the institute during the present month: Thomas Adam, M.D. Glasg., Tom William Beazeley, M.B. Birm., and Sydney Taylor Champtaloup, M.B. Edin.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

Vaccines from the Standpoint of the Physician.

A MEETING of this section was held on Jan. 27th, Dr. SAMUEL WEST, the President, being in the chair.

Dr. T. J. HORDER read a communication on Vaccines from the Standpoint of the Physician. His paper will be found in full on p. 310.

The PRESIDENT, in opening the discussion, said that the term "physician" was meant to include all those who had the opportunity of watching the effects of vaccines from the clinical side. He suggested as special points on which emphasis might be laid: (1) the contra-indications; (2) cases where vaccines had been used, had failed, and been abandoned, and the reasons for this; and (3) cases in which definite ill-effects had been produced by them.

Dr. J. CHARLTON BRISCOE commenced with some general remarks, giving reasons for the disappointment which had been experienced by some in results produced by vaccine therapy. He then mentioned three cases—a staphylococcic infection, an asthmatic case with a lesion in the nose, and a case of rheumatoid arthritis, illustrating the points: (1) that a vaccine injection tended to produce local necrosis; (2) the toxic symptoms alone might be relieved; (3) that an infected area ought to be completely removed in order to avoid the risk of a recurrence, even when a vaccine relieved the symptoms. Illustrating the first point, he quoted cases where empyema had followed vaccine injections, and gave a warning against the employment of this treatment in large lesions where drainage had not been effected. He claimed that vaccines diminished the amount and duration of the suppuration which followed the evacuation of pus, and materially assisted the closing of recent sinuses. Illustrating the second point, he remarked upon the striking success which followed the treatment of asthma by the eradication of some septic focus, or by treatment by vaccines grown from the sputum. He instanced three cases in which this treatment was a complete failure, to show that success did not always follow. Following this line of argument, he indicated that bacilluria, when causing symptoms, and rheumatoid arthritis were conditions which were readily relieved by vaccines. He recommended that where possible the infecting focus should be completely removed on account of the liability to relapse when the injections were discontinued. He then related some cases in which recognised treatment had completely failed where vaccines had produced good results. The cases instanced were (1) a staphylococcal cellulitis of the scalp; (2) a bacillus coli infection of the genito-urinary tract; (3) a non-tuberculous caseation of large size in the pelvis; (4) an acute pyrexial polyarthritis (not acute rheumatism); and (5) a bronchorrhœa of 30 years' standing. Finally, he drew the general conclusions: that vaccines were distinctly useful as a therapeutic measure, but should be employed in conjunction with recognised treatment; that all infecting focuses should be removed; that where such was not possible, vaccines might relieve symptoms; and he concluded that he had never seen a case where permanent injury had been produced by this form of treatment.

Dr. H. T. GILLETT said that the results in treatment by vaccines would depend not only on the use of an efficient vaccine, but also on the method of administering the doses. The intensive method of Fornet and Müller had not been successful in two cases in which he tried it, but gradually increasing doses allowing sufficient interval for recovery from any negative phase he had found very satisfactory. About 75 per cent. of his chronic bronchitis cases had responded favourably to an autogenous vaccine; some cases complicated with dyspnœa were very greatly benefited, but some chronic cases were obstinate. He had found that benefit had followed this line of treatment in the following diseases: leucorrhœa, rheumatoid arthritis, septicæmia, pneumonia, and bronchopneumonia; and had almost invariably used autogenous vaccines. On a few occasions he had used sensitised vaccines with good results, but where the patients' powers of response were adequate the ordinary

vaccine probably stimulated the tissues to the formation of a larger quantity of antibodies than would be the case when immune body was injected at the same time.

Dr. PHINEAS S. ABRAHAM protested against the use of the term vaccines for these preparations or emulsions of killed micro-organisms as inaccurate and misleading. He had tried the injection treatment in several generalised diseases of the skin with little or no benefit, and had seen the results of such injections at the hands of others when the patients had come to him after a course which had proved futile and sometimes even disastrous. In his opinion the new methods were justified in severe cases when ordinary measures had failed, but not in cases amenable to well-tried and safer treatment.

The discussion will be continued on Feb. 3rd at 5 P.M., when it will be reopened by Dr. H. D. Rolleston.

SECTION OF LARYNGOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Jan. 9th, Dr. D. R. PATERSON, the President, being in the chair.

Dr. H. LAMBERT LACK showed three children with Diffuse Infiltration of the Soft Palate and Upper Part of the Larynx due to congenital syphilis. Wassermann's reaction was positive, but the condition did not yield to iodine, mercury, or salvarsan. It was remarked that the infiltrations described by Dr. Brown Kelly were probably of the same nature.—Mr. H. TILLEY regarded the condition as a new clinical entity, and would like to see if removal of the enlarged tonsils present in the three patients would affect the infiltration.

Dr. W. H. KELSON exhibited a patient, aged 70, from whom he had removed a large Pharyngeal Pouch under local anæsthesia for Progressive Dysphagia and Wasting. The omohyoid was divided and the pouch dissected out from behind the œsophagus; it extended to the aortic arch.—Dr. A. C. JORDAN illustrated the straight upper edge present in bismuth skiagrams of pharyngeal pouches. The only œsophageal pouch he recognised was a small pocket to be seen below the crossing of the bronchus.

Dr. DAN MCKENZIE brought three patients, aged 7, 12, and 15, illustrating Sinus Disease. The first case, where the trouble had followed a fall, was cured by draining the left frontal sinus and a left nasal antrostomy. The second case, one of double antrum disease, was cured by a radical antral operation on one side and simple nasal antrostomy on the other. The third suffered with left frontal suppuration and ethmoiditis. She was unrelieved by curetting and drainage. A Killian's operation, though the bridge necrosed, was followed by relief.—The PRESIDENT remarked that injuries were frequently followed by frontal sinus suppuration; this was his experience in compensation cases.—Dr. P. WATSON-WILLIAMS was of opinion that the accident was superimposed on an inflammatory condition, such as was found with influenza.—Mr. H. TILLEY considered that the frontal sinus was frequently affected, but usually recovered of itself or if treated with irrigation.

Dr. MCKENZIE also showed a case of Cavernous Angeioma of the Uvula, and a case of Combined Syphilitic and Tuberculous Infiltration of the Larynx.

Mr. E. D. DAVIS's case of Myasthenia Gravis with Adductor Paresis of the Cords and Paresis of the Palate in a woman, aged 25, was discussed by Dr. GORDON M. HOLMES, who alluded to the great effect of fatigue on such cases, for they did not lose weight if fed in the morning when they were fresh. The muscles did not waste, and palsies were rare. The orbiculares of the eye and mouth were occasionally paralysed, the palate and larynx more rarely still. The intensity of the symptoms depended on fatigue and was variable.—Sir FELIX SEMON remarked on the uncertain pathology of the disease, in which the periphery was possibly affected, and so did not oppose "Semon's law."

Mr. DAVIS also showed a case of Complete Adductor Paresis in a man aged 47, following influenza. Three years ago the arytenoid section of the rima only was affected.—Sir FELIX SEMON was convinced of the functional character of the lesion, and Mr. TILLEY advocated applying a strong faradic current intralaryngeally as the patient came round after general anæsthesia.—Dr. F. DE HAVILLAND HALL recalled instances of patients who had called out when so treated, but subsequently relapsed.

Mr. DAVIS also showed an Open Safety Pin removed by Suspension Laryngoscopy; also a Farthing which was impacted at the orifice of the œsophagus in a boy, aged 4, which was invisible by suspension laryngoscopy. An œsophagoscope was readily passed in the suspension position and the coin removed.

Mr. NORMAN PATTERSON brought a case of Marked Deflection of the Posterior Part of the Nasal Septum.—Dr. G. WILLIAM HILL considered the septum was that usually found with cleft palate, though here the uvula only was split.

Dr. W. JOBSON HORNE exhibited a man with a Sloughing Neoplasm occupying the right vocal cord, which was fixed.—Dr. J. DUNDAS GRANT diagnosed a gumma, and Professor BURGER (Amsterdam) gave a reasoned argument for the same opinion.—Sir FELIX SEMON thought that the growth was malignant.

Mr. H. W. HOWARTH exhibited a case of Carcinoma of the Palate.—The PRESIDENT advised the removal of the cervical glands on both sides.

Mr. C. I. GRAHAM exhibited a case of a Small Growth in the region of the Left Superior Cord.

Dr. WATSON-WILLIAMS brought Diagrams and Skiagrams of Patients and Instruments illustrating his Intranasal Method of Treating Frontal Suppuration. By this method the infundibulum was opened up by nibbling away the anterior wall and anterior part of the middle turbinal.

MEDICAL SOCIETY OF LONDON.

Exhibition of Clinical Cases.

A MEETING of this society was held on Jan. 26th, Sir DAVID FERRIER, the President, being in the chair.

Mr. J. E. H. ROBERTS showed a case of a Man with an Old Fracture of the Pelvis and a Transpubic Hernia: Skiagrams and a Special Truss. In July, 1911, the patient had a lift accident. The lift descended as he was getting out, and he was left with his legs in the descending lift and his chest on the floor. The top of the lift came down on the pelvis behind. Skiagram No. 1, taken at the time, showed a separation of the symphysis pubis and a fracture through the horizontal ramus. At the time of the accident the patient had a right femoral and a left inguinal hernia. Skiagram No. 2, taken in January, 1914, showed that no bony union had occurred at the symphysis. On palpation it was found that firm union was present at the lower part of the gap, but that the upper three-quarters of the gap was still present. Through this gap a hernia protruded on coughing. The hernia contained intestine. The special truss shown controlled the hernia well. An interesting point was that the original inguinal hernia had disappeared. The inguinal canal was empty, and the external ring could be felt at the side of the orifice through which the present hernia protruded.

Mr. ROBERTS also showed a case of a man with Cloquet's and other Herniæ. The man, aged 62, had on the right side an ordinary scrotal hernia which had been present from birth. On the left side was an inguinal bubonocele which protruded into the thigh below Poupart's ligament. A well-marked groove was present where the ligament divided the swelling into two parts. Both swellings were reduced together and pressure over the outer part of the inguinal canal, prevented the descent of the hernia. This form of hernia had not hitherto been described. The patient had also on the left side a saphena varix at the site of the saphenous opening which might be mistaken for a femoral hernia.

Mr. V. WARREN LOW showed a case of Benign Growth in the Tibia of a Boy. He said that he had shown the boy to the Medical Society in November, 1910. He first came under notice in 1908, when he was brought to the hospital on account of a swelling in the right tibia, which was said to have followed a vague injury to the ankle one month previously. There was then a smooth uniform swelling of the subcutaneous surface of the tibia extending from a point two inches above the ankle to a point beyond the middle of the bone. The swelling was hard and firm, gradually shelving into normal bone and not particularly tender. The boy complained of pain when he walked about, but suffered no inconvenience when he was at rest. In June, 1908, the bone was exposed, the thin compact tissue

gouged away, and the interior of the bone carefully examined, but no pus, caseous material, or dead bone could be found. The cancellous tissue appeared softer than normal and yielded to the finger. The incision was closed without drainage, and the boy left the hospital a fortnight later. Small pieces of cancellous tissue were removed and examined microscopically; the pathological report stated that there was evidence of chronic inflammation, but no evidence of either tubercle or syphilis. In June, 1909, the bone was again opened and the softened area gouged away. Again, nothing was noted beyond the marked softening of the cancellous bone. No pus or sequestrum was present, nor were there any of the granulations associated with early tuberculous osteitis. The wound was again closed without drainage, and the boy left the hospital a fortnight later. The pathological report was again to the effect that only evidences of chronic inflammation could be found. In June, 1910, he was again operated upon and a large mass of soft cancellous tissue of the consistency of putty and containing bony granules was removed by means of a knife and sharp spoon. The walls of the cavity containing this substance appeared to be normal. This material was also examined by Dr. Spilsbury, who declared it to be a central ossifying myxofibroma of the tibia. In October, 1910, while running, the boy tripped up and fractured his right tibia and fibula, the fracture passing through the growth. He was treated in St. Mary's Hospital and the bones were united in a normal manner, so that it would now be difficult to say where the fracture had taken place. He had seen the boy from time to time and had satisfied himself that the growth was gradually becoming larger. At the same time the tibia was becoming more curved and was increasing in length. The boy always asserted that the lump caused him no inconvenience, and it had only been with much persuasion that he had been induced to go into hospital.

Mr. LOW also showed a case of (?) Enchondroma of the Lower End of the Femur undergoing Calcification. The patient, a youth aged 17, first noticed a swelling in the right popliteal space three years ago. The swelling was slightly painful and tender, but remained small until a year ago, when it rapidly increased in size and reached its present magnitude some months ago. In the right popliteal space was a hard oval lump not fixed to superficial structures but immovable in relation to the femur. It was a little tender on pressure. Bending the limb, as in walking, was also painful, and the boy in consequence has a slight limp. There were no symptoms of pressure on vessels or nerves. An X ray photograph showed some calcareous deposit in the centre of the tumour, but did not show any continuity between this and the femur.

Mr. CHAD WOODWARD showed a case of Fracture of the Femur treated by Direct Extension of the Fragments. The patient was a man, aged 39, who fell from a ladder a distance of about 15 feet and fractured his right femur. He was treated at first with extension by adhesive plaster and a long splint in the usual way. When he came under Mr. Woodward's care, ten days after the accident, he found shortening amounting to three-quarters of an inch. He therefore decided to employ a more satisfactory way of producing extension—by means of Steinmann's apparatus. The steel pin was bored through the lower end of the femur under local anæsthesia and a 14 lb. weight was attached to the extension cord. The limb was placed comfortably on pillows, the knee and hip-joints being in a position of slight flexion. The weight was increased at the rate of 2 lb. a day until 24 lb. was reached. After three days' extension with 24 lb. the injured limb was longer than its fellow by slightly more than half an inch. The weight was then decreased to 21 lb., and this degree of extension was maintained for a fortnight. On the twenty-second day the pin was removed. Simple rubbing was easily carried out owing to the complete freedom of the limb from splints and other retentive apparatus. Active movements at the toes and at the ankle and knee-joints were possible from the very first. The fracture involved the upper third of the shaft chiefly, which was split longitudinally, and there was apparently one large loose fragment. Unfortunately the X ray was not working well and the negative was of no value as a record. Photographs were shown illustrating the condition at the present time.

Dr. J. L. BUNCH showed a case of Multiple Rodent Ulcer following traumatism. The patient, aged 78, had several scars on his face, varying in size from a pea to a five-shilling piece, which he said were caused by the removal of several tumours at the Cancer Hospital many years ago. These tumours developed after he had been stung on the face by a swarm of bees. They were effectually removed and no recurrence has taken place in the scars. Five years ago the patient had his nose frost-bitten, and soon afterwards a small tumour made its appearance near the end of the nose. This after a time ulcerated, and when shown the ulcer was about the size of a sixpence and was surrounded by a raised, thickened edge, showing fine vessels ramifying over it, the whole lesion being about the size of a shilling. There were then smaller typical rodent ulcers in the left cheek which had been present a shorter time. The ulcer had been treated by radio-active earth directly applied, but it had failed to effect a cure, and it was proposed to apply radium to the lesions.—Mr. CAMPBELL WILLIAMS mentioned some cases of his in which rodent ulcers had similarly followed traumatisms.

Dr. BUNCH also showed a case of Extragenital Chancre. The patient, a young woman, had a well-marked primary chancre of the upper lip, indurated but not ulcerated, from which the spirochæta pallida had been demonstrated. This chancre was acquired about the middle of August last, and was followed by well-marked adenopathy and by the appearance three weeks later of a well-defined large follicular syphilitic eruption on the limbs and trunk. Both the chancre and the rash were typical when shown at the society's meeting, no antisyphilitic treatment having been prescribed. The exhibitor drew attention to the fact that in England the percentage of extragenital chancres was about 8 as compared with 92 per cent. of genital chancres, whereas in some provinces of Russia the percentage of extragenital chancres was as high as 92, as against 8 per cent. of genital chancres. In other words, most of the population had acquired syphilis extragenitally before the age at which a genital chancre was usually seen. It was proposed to treat the patient by injections of neosalvarsan.—Mr. CAMPBELL WILLIAMS laid stress on the fact that many labial chancres showed no ulceration, and drew attention to the long time during which an untreated chancre may persist.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Renal Retinitis.—Conditions which may Simulate Acute Appendicitis.

A MEETING of this society was held on Jan. 1st, Dr. R. J. RYLE being in the chair.

Dr. RYLE showed a patient with Advanced Renal Retinitis, with marked optic neuritis, white atrophic patches about macula, hæmorrhages, &c. The case was of interest because it had been seen at a London hospital and had been sent on definitely for a decompression operation. The patient had albuminuria and high-tension pulse, a doubtful history of syphilis, and had suffered from sunstroke with subsequent headaches, but never had any fits or other localising brain symptoms, and it seemed certain that kidney disease was the sole cause, and the prognosis was grave.—Mr. H. H. TAYLOR, Mr. L. A. PARRY, and Mr. G. MORGAN concurred with the diagnosis, and failed to see any reason for the suggested operation.

Mr. H. N. FLETCHER read a paper on Conditions which may Simulate Acute Appendicitis, and some points in the Differential Diagnosis. He stated that in children tuberculous or pneumococcal peritonitis and forms of gastro-enteritis, and in female adults conditions affecting the pelvic organs, were sources of difficulty in diagnosis. Salpingitis, partly because of the inadvisability of operation in the acute stage, was perhaps the most important and also one of the most common. The actual site of initial pain was often of great value, because in salpingitis or twisted ovarian cyst, &c., this was always situated below the umbilicus, while in appendicitis it often commenced above. The history, tracing trouble back to a confinement or miscarriage, careful pelvic examination, and the fact that salpingitis was generally bilateral were also aids. The fact that the patient was unmarried should not be taken to exclude the possibility of

salpingitis. The exceedingly sudden and agonising pain, attended often by vomiting and faintness, with perhaps loss of dark blood per vaginam, served to distinguish ruptured ectopic gestation, while careful bimanual examination would generally disclose a twisted pedunculated fibroid or ovarian cyst. Among diseases common to both sexes were perforated gastric or duodenal ulcer, with epigastric pain of intense and sudden nature, and a history of previous digestive trouble, which also occurred in acute cholecystitis. In typhoid fever with acute onset, a common source of error in which operation had been frequently performed, there was usually a low leucocytic count, the opposite being the case in appendicitis. Acute pancreatitis, strangulation and obstruction of the bowel, inflamed Meckel's diverticulum, renal colic, and malignant growth of the cæcum were among other conditions discussed by Mr. Fletcher, who concluded by emphasising the value of methodical examination and careful consideration of the history of each case.—An interesting discussion followed. Dr. RYLE referred to cases with associated inflammation of appendix and ovary.—Mr. A. H. BUCK spoke of the impossibility of diagnosis in many cases even after operation, the exact starting point of inflammation not being traceable.—Mr. WILLOUGHBY FURNER expressed doubt as to the advisability of a general anæsthetic in cases of appendicitis complicated with pneumonia.—Mr. C. N. CHADBORN instanced difficulties in diagnosis from cases of lead colic.—Mr. MORGAN discussed cases in which severe abdominal symptoms occurred shortly after labour where there had been slight appendicitis during pregnancy, and Mr. PARRY cases following operation for adenoids.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Cancer of the Appendix.—Intestinal Toxæmia.

A MEETING of this society was held on Jan. 21st, Mr. JAMES W. B. HODSDON, Vice-President, being in the chair.

Mr. J. M. GRAHAM read a paper on Cancer of the Appendix, founded on 11 cases of primary cancer, and illustrated with many fine coloured slides. In 1906 Rolleston and Jones had been able to collect details of 37 cases of the disease. Subsequent careful examination of appendices showed the condition to be less rare than was thought. Over 200 cases had now been recorded. The author had found cancer in 6 cases out of a series of 500 appendices removed at operation, or in 1·2 per cent., a slightly higher percentage than Baldauf's 1 per cent. MacCarty and MacGrath in a series of 5000 appendices found cancer in 22 cases, or 0·44 per cent. The tumour was generally small and likely to be mistaken for a concretion embedded in the lumen, or for a diverticulum or a localised inflammatory nodule. In five of his (Mr. Graham's) series of cases it was only on splitting the appendix throughout its length that a tumour could be detected. A most striking fact about cancer of the appendix was its benign nature in most cases. Many names had been applied to the different types of cancer of the appendix, which, however, fell into two main groups: (1) Spheroidal-celled cancers; and (2) cylindrical-celled or colloid cancers. Certain differences could be noted between the two main types: (1) The spheroidal-celled cancer was much commoner; (2) the average age-incidence was 27·2 years; and (3) this type was extremely benign—only one case out of a series of 137 cases gave rise to metastases. As regarded the cylindrical-celled or colloid cancers, (1) these occurred in older patients as a rule, at the average age of 40 years; (2) they had a greater degree of malignancy—metastases occurred in six cases out of a total of 35 in this group; and (3) the average age in the six cases with metastases was 57·8 years. The prognosis must therefore be guarded in cases of cylindrical-celled cancers, especially in middle-aged patients. In the 10 cases of spheroidal-celled cancer described by the author the average age was 24·2 years. In only one case was the patient over 30 years of age. All the specimens but one were obtained at operation. In these cases cancer bore a close relation to appendicitis. In 4 of the cases the appendix was acutely inflamed. In 2 of these cases and in 6 of the others there were chronic lesions at the site of the tumour, suggesting the origin of the cancer at the site of an antecedent lesion. In one case at least the cancer had developed in an otherwise normal appendix, and in this case the tumour had undoubtedly excited the onset of appendicitis. The *site* of the cancer in 6 cases was at or near the tip of the appendix, while in the remaining 4 it was at the middle portion. The *size* of the tumours varied from that of a split shot to a bean. In distribution they occupied the mucous and submucous coats principally. The signs of local malignancy showed themselves in local invasion of the coats, which frequently reached the peritoneal surface and the fat of the mesentery. In 8 of the 10 cases the tumour was of a characteristic golden-yellow colour. In the other 2 cases it was greyish-white in colour. The lumen of the appendix was completely obliterated by the tumour in all but two cases. Microscopically the cells were small, round, or polyhedral and arranged in alveolar masses of varying size, as in scirrhus or encephaloid of the breast. In five of the cases the type corresponded to the scirrhous variety, in three to encephaloid; in two cases whilst mainly scirrhous, areas of tubular adenocarcinoma were present. The evidence in these two cases, which in other respects exactly resembled the rest of the cases in this group, sufficed to demonstrate the origin of these tumours from the secreting epithelium of the mucosa and to establish their carcinomatous nature. Vacuoles were fairly common in the cells. The detection of lipoids in the cancer cells explained the yellow colour of the tumours. Examination of frozen sections with the heated stage and polarising microscope showed that the lipoids were of the nature of myelin. This substance was present in the normal suprarenal cortex and in cells of hypernephromata, and explained the golden-yellow colour seen both in the latter and in the spheroidal-celled cancers of the appendix. As regards the relation of cancer of the appendix to obliterative appendicitis, it was probable that cancer of this organ frequently started (1) at the junction of the lumen with a previously obliterated portion; (2) in a partially obliterated lumen; and (3) in the site of a chronic lesion—e.g., ulcer of the mucosa. Certain cases, however, undoubtedly commenced in a healthy mucosa. The origin of a cancer in the narrowed lumen of a partially obliterated appendix would explain the complete obliteration of the lumen by most of the tumours. The changes observed in a series of obliterated appendices showed that (1) traces of the lumen often remained, though to the naked eye obliteration appeared complete; (2) isolated tubules in process of disappearance might be found; and (3) at the junction of obliterated portions the mucosa was often profoundly altered. It was probable that, as in gastric ulcer so in the appendix, chronic lesions might predispose to the origin of cancer. After-history of cases of spheroidal-celled cancer: Six patients reported themselves well at periods of 5, 3, 2½ years and a few months after operation. In no case in which subsequent history was ascertained were there symptoms suggesting recurrence. The eleventh case illustrated tubular adenocarcinoma and was very malignant. This case was that of a male patient aged 48. He had been in ill-health for 15 months suffering from indigestion and occasional vomiting. Pain was felt in the right iliac fossa, and a nodule was present at the umbilicus. At the operation the cæcum was found to be fixed by adhesions and the appendix was very hard, suggesting malignant disease, while secondary nodules were present throughout the peritoneum and in the omentum. The patient died three weeks after the operation, and on examination the specimen was found to be a cancer of the tubular type occupying the centre of the appendix and extending along the mesentery to the cæcum. The appendix beyond the cancer was completely obliterated by fibrous tissue. Conclusions as to the benign nature of the majority of appendix cancer cases, particularly the spheroidal-celled cancers: It might be thought that the spread of the disease to the cæcum would obscure the primary origin of many cases of such appendix cancer. This was not the case, because (1) cancer occurred rarely at the base of the appendix, (2) this type of cancer was rare in the cæcum, and (3) examination of cæcal cancers showed the appendix uninvolved or, if involved, its spread from the cæcum could be observed. Lymphatics drained from the appendix freely into the abdominal glands, and therefore there was no hindrance to the spread of cancer. Cancer of the appendix, especially in spheroidal-celled cases, must be of a naturally benign type, comparable to rodent ulcer, locally invading but rarely giving rise to metastases.—Professor F. M. CAIRD doubted if cancer of the appendix was as common as those

statistics would lead them to believe. He had only met with two cases, and he invariably cut through every appendix he removed. The characteristic colour of the tumour would draw attention to the condition.

Dr. D. CHALMERS WATSON read a paper on Intestinal Toxæmia, with Special Reference to the Indications for Operative Treatment. The paper was illustrated by X ray photographs showing the position of the stomach and the rate of progress of a bismuth meal.—Mr. HODSDON said that surgeons were greatly divided in opinion as to the form of operation. Lane believed that nearly all abdominal ills were due to intestinal stasis, and in severe cases he excised the cæcum and large intestine. Others contented themselves by fixing the cæcum if movable, and again, others by merely dividing adhesions.—Professor CAIRD had observed that in cases of definite stenosis of the pylorus the patient almost invariably suffered from vomiting and pronounced constipation. After operation such cases improved greatly and constipation disappeared. Adhesions might be present and yet unassociated with symptoms. One met with cases of old peritonitis or ruptured gastric ulcers in which the whole coils of intestine were matted together, and yet during life the alimentary canal had been doing its work in normal fashion. He had operated on a very intense and chronic case of constipation in which the abdominal cavity appeared perfectly normal, and the constipation entirely ceased after the operation. He suggested reviving the ancient plan of raising the patient's feet more by elevating the lower end of the bed and giving a nightly dose of castor oil.—Professor WILLIAM RUSSELL was not prepared to accept the interpretation of many of the X ray photographs which Dr. Chalmers Watson had shown, or to accept many of the stomachs as normal, nearly all of them showing a definite degree of proptosis. Ptosis of the transverse colon was exceedingly common and could be diagnosed without X ray examination; it might be extremely marked and yet cause no symptoms whatever. How often and in what instances were symptoms due to proptosis or delay in the passage of the intestinal contents? That symptoms were due to absorption of intestinal bacterial products as a result of dried fæces had been greatly exaggerated, and the subject was certainly not in a position to be spoken about as if we knew altogether the life-history of anaerobic organisms. While he recognised that neurasthenia and rheumatoid arthritis might be greatly benefited by medical treatment, it by no means followed that all such cases were to be regarded as determined by intestinal conditions. As to the influence of kinks and bands in an intestine with any mobility, he was a profound sceptic as to fixing the cæcum or to the separation of bands or kinks. He admitted the benefit of short-circuiting in certain cases, but it would not relieve all symptoms. He doubted whether the colon was that part of the intestine which ought to be attacked. Often the stomach was at fault, and when short-circuiting was done in this organ all the other symptoms were frequently relieved.—Sir JAMES O. AFFLECK asked how, granting all about intestinal stasis, did toxæmia arise? Stasis must be quite common, suggesting some defensive action which prevented toxæmia. Toxæmia might occur as a result of various conditions—e.g., a fæcal ulcer causing diffuse abscess of the liver or a general infection—while bacterial and chemical action must account for a good deal of the condition. Little had been said about the condition of the canal itself and how much it might be involved in the toxæmic condition. In these cases of intestinal toxæmia medical treatment ought to be persevered in for a very considerable time. When one was in a difficulty one was too apt to call in the surgeon.—Dr. CHARLES W. MACGILLIVRAY had always held that the whole of the alimentary canal prevented absorption of toxic material unless it had become devitalised, as by inflammation. Purgatives relieved a loaded bowel but irritated it at the same time, and so absorption of toxic products was allowed.—Dr. H. TORRANCE THOMSON suggested that intestinal stasis was a local condition due to a general cause.—Mr. GEORGE L. CHIENE thought that anchoring the bowel to any part of the abdominal wall was wrong. A simple anastomosis into the transverse colon would give the advantages without any of the disadvantages.—Mr. J. W. DOWDEN said that most of these cases occurred in youngish women, many of whom suffered from a floating kidney on the right side, due to compression of the ribs by corsets. Short-circuiting in such cases had not in his experience given good results. It might be found that all the symptoms had been due to a small collection of pus in the appendix.—Mr. J. W. STRUTHERS said that an examination after a single bismuth meal could not be relied on. The interpretation of some of Dr. Chalmers Watson's findings was open to question. A proptosed colon might be a perfectly normal one. Adhesions were found frequently in children as well as in adults. These adhesions were so numerous that they must be anatomical conditions. Such adhesions were present in fœtal conditions. In the majority of cases Jackson's membrane, kinks, &c., had no effect on peristalsis and caused no hypertrophy of the bowel behind them. Short-circuiting was often disappointing. An enormous area was left in which putrefaction of the contents might take place and toxic absorption follow.—Mr. E. W. SCOTT CARMICHAEL said that greater experience allowed us to depend less and less on anatomical features as displayed in X ray photographs. The rate of progress of a bismuth meal must vary, not only in different persons, but also in the same person at different times. He thought that the screen gave better information. He thought that tacking down the cæcum or plicating it were operations of doubtful value.—Several other gentlemen took part in the discussion and Dr. CHALMERS WATSON replied.

EDINBURGH OBSTETRICAL SOCIETY.

Early Human Ovum.—Biometric Analysis of Insemination-Labour Curves and Menstrual-Labour Curves in Mammalia.

A MEETING of this society was held on Jan. 14th, Dr. G. F. BARBOUR SIMPSON, senior Vice-President, being in the chair.

Dr. R. W. JOHNSTONE gave a short account of the history of an Early Human Ovum which he had been investigating, and demonstrated the main points of interest in it by a series of colour-photographic lantern slides. The ovum, which was obtained *in situ* from a woman who had died suddenly from fatty heart, corresponded both in size and in the stage of development of the villi to the specimen described by Jung a few years ago, being probably about 16 days old. Unfortunately the specimen had received some damage before being hardened, and this had affected the contents of the blastocyst and rendered their interpretation a matter of some difficulty and dubiety. The woman died suddenly without having missed a menstrual period. The blastocyst contained two large vesicles each consisting of two large cells, and each attached definitely to the mesoderm of the chorion. If these represented the two vesicles of a single embryo, this double attachment was unusual. There was, however, some reason to believe that each vesicle represented a separate embryo, and that the specimen was one of uni-ovular twins. Owing to the damage received by the tissues, it was unfortunately impossible to be certain of this. In connexion with several of the slides Dr. Johnstone discussed shortly the nature and relations of the trophoderm and the mode of formation of the intervillous spaces.—Dr. BARBOUR SIMPSON remarked on the beautiful slides demonstrated by the epidiascope. The case was successfully established as one of early pregnancy, but whether it was a possible twin pregnancy, one could not dogmatise.—Dr. D. BERRY HART remarked on the interest especially of the slides relating to the development of the placenta. He believed the case to be one of undoubted pregnancy, and possibly twin, but he thought the embryonic structures must have died some time before the woman. There was a very good representation of the origin of the placenta, but the real embryonic part had degenerated.—Dr. JAMES YOUNG said that the changes which Dr. Johnstone referred to and so clearly demonstrated had amply convinced him that one had to look to a different explanation of the method of opening out of the maternal blood vessels and the establishment of the blood supply than that set forth in the orthodox text-books. As had been demonstrated, it was an extremely simple thing to suppose that as these distended capillaries gradually extend they inevitably must result in pouring their contents into the fœtal cavity. He (Dr. Young) had suggested this some years ago, and Dr. Johnstone's specimen had again clearly demonstrated that possibility.—Dr. J. HAIG FERGUSON, Dr. JAMES RITCHIE, and Dr. W. FORDYCE made remarks, and Dr. JOHNSTONE replied.

Dr. BERRY HART read a paper on a Biometric Analysis

of Certain Insemination-Labour Curves and Menstrual-Labour Curves in some Mammalia. He first pointed out that in a previous paper he had stated that certain labour date statistics in cattle (by Spencer) and in ewes (by Tessier) and in the human female (by von Winckel and Reid) when flattened out and grouped in 48 or 96 hourly periods gave a frequency polygon, somewhat skew or humped. It was necessary, however, to flatten out these curves in 24 hourly periods, and then see how they could be treated by Gauss's method of least square. In Spencer's cattle statistics there were 764 animals, and the sum of their days between insemination and labour was 216,451; this divided by 764 gave a mean of 283·3 days. The sum of the square differences between the mean and the actual dates gave 60,649, and the probable error of one observation was found to be 6·012 days. The probable error of the mean was 0·218. Thus are calculated from the date of insemination in cattle a period of 283 days with a probable error of plus or minus 6 days. In Reid's 500 human cases treated in the same way the mean was 278 and the probable error of one observation was 7·748; the probable error of the mean was 0·3466. Thus the date of labour reckoned from the last day of menstruation should be 278 days plus or minus seven days; but the most probable duration was 277·93 or 278·63 days.—Dr. JOHNSTONE said that Professor Arthur Robinson, who had been investigating the subject in ferrets, informed him that if one took a number of ferrets that were inseminated on the same day and then killed them at an early stage of development the embryos were found to be in considerably different stages of development. But when a similar number of ferrets were allowed to go on to full time, then the insemination-labour curve was practically uniform. Apparently from that statement development must go on at a different rate in different embryos, and must in some instances make up for lost time. —Dr. BARBOUR SIMPSON, Dr. HAIG FERGUSON, and Dr. J. LAMOND LACKIE made remarks on the paper, and Dr. BERRY HART replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Cases and Specimens.—Radical Operation for Chronic Osteomyelitis.—Stone and Tumour in the same Kidney.

A MEETING of this section was held on Jan. 9th, Dr. R. D PUREFOY, the President, being in the chair.

Mr. SETON S. PRINGLE showed three examples of operation for disease of the bowel. (1) An excavating ulcer on the lower end in a man aged 65. It was carcinoma of the bowel, and was removed by the combined abdominal and perineal method. (2) A ring stricture of the sigmoid. The case came to him as one of acute obstruction, and the bowel was resected three days later, and the patient was doing well. (3) Sarcoma of the small intestine close to the ileo-cæcal valve. The patient, aged 65, when first seen was thought to have cancer of the cæcum. Radical operation was done and several feet of the ileum removed and an anastomosis made between the ileum and the transverse colon. The patient was now out of hospital and gathering strength.—The PRESIDENT asked how long the symptoms of obstruction continued in the case of cancerous cæcum before there was anything to point to more than increasing constipation. He considered there was much difficulty in trying to decide in those cases as to whether there was really malignant disease. —Mr. W. PEARSON inquired why in the case of acute obstruction a cæcostomy was done, since the contents of the bowel from the cæcum were extremely irritating to the skin. He indicated that he would have preferred to do a colostomy in the transverse colon.—Mr. A. J. MCA. BLAYNEY said that in dealing with certain cases of acute obstruction a very distended abdomen was usually met with, and the operator had no means of determining the position of the growth. He suggested that the first thing to do was to make an incision in the middle line. He had experienced no irritation of the skin after cæcostomy, although such might be expected.—Professor W. TAYLOR considered the specimens of very great surgical interest. He thought that in cases of cancer with obstruction in the large bowel the procedure mentioned by Mr. Blayney was the best—i.e., to deal with the obstruction by means of a temporary opening in the cæcum. He agreed that the cæcum was always very much distended in these cases. He could speak from some experience of the very beneficial effects of a cæcostomy preliminary to the major operation.—Mr. W. I. DE C. WHEELER mentioned that five years ago he advocated drainage of the intestine through the cæcum, and he had since no reason to regret this. He could never see any practical objection to cæcostomy, notwithstanding anything said in the text-books.—Mr. PRINGLE, in reply to the President, said that that patient had increasing constipation for a year, and there was obstruction for over ten days. There was no question as to the diagnosis. An aid in such cases was the administration by mouth of a bismuth meal, supplemented by bismuth given through a tube. Another method was the use of the sigmoidoscope. He had found the latter to be quite safe. Regarding cæcostomy, he would always do it when there was a chance of carrying out a radical operation. He had not found that it gave rise to irritation. He recognised the necessity for dealing with as wide a lymphatic area as possible.

Mr. WHEELER showed specimens of Complete Colectomy for mucous colitis, Spindle-celled Sarcoma of Thigh, and Cancer of Stomach, in a patient aged 27.—Mr. C. A. K. BALL mentioned a case of spindle-celled sarcoma in which the patient complained of an abscess in the thigh. This was opened, and the pathological report was that it was a fibroma into which a hæmorrhage had taken place. Six months afterwards a small hard lump occurred in the thigh; this was removed and found to be a spindle-celled sarcoma. It again recurred on two occasions, but the patient recovered, and was well now for over three years.—The PRESIDENT, referring to the case of mucous colitis, inquired what was the prognosis as to the general health of the patient. These were shocking cases to have to deal with, but he thought he could recall some in which the condition disappeared.—Mr. WHEELER replying, said that the patient had no mucous colitis now, and, as far as the bowels were concerned, they were regular. He had been treating the case for two years before doing the colectomy.

Mr. PRINGLE read a communication on Radical Operation for Chronic Osteomyelitis. He first called attention to the unsatisfactory results obtained by the old "gutter" operation. He believed sinuses persisted after this operation because a cavity was left with hard bony walls which could not fall in and assist in obliteration of the space left. He advocated removal of the greater part of the shaft of the bone in such a way that the soft tissues were able to fall in and obliterate any cavity left. In some cases he advocated complete subperiosteal resection of the shaft of the bone.—Mr. BLAYNEY considered this the most important paper read at the section for some time, as it represented a definite step in the treatment of those very troublesome cases. Since he first heard of the procedure he had been carrying out the operation with very satisfactory results.—Mr. WHEELER congratulated Mr. Pringle, and said that he had recently adopted the method in the case of a man suffering from chronic disease of the tibia, and although there was a fracture in the strip of the bone left it gave rise to no trouble afterwards. He was extremely interested in the resection of the bone, as he had been carrying out this in children. He had demonstrated that the periosteum did form bone in children, and the process could be seen in X ray photographs.—Dr. H. DE LISLE CRAWFORD said that he had experience of four cases where the disease spread to the epiphysis, in which he found that the dead bone extended to the end, and that in every case there was a large cavity.—Mr. PEARSON said he thought the periosteum was to be regarded as bone surface. He recalled a case in which there was no necessity for peeling off the periosteum at all, and the entire wound was healed in four weeks.—Mr. PRINGLE, in reply, said he thought that in childhood there was a certain number of osteoblasts lying in the periosteum. There was no doubt that in some few cases the periosteum failed to regenerate bone.

Mr. BALL described a case of Stone and Tumour in the same Kidney. The patient, a man aged 45, had complained for two years of a more or less continuous pain in the region of the right kidney. He had twice passed blood—once about two years ago, once a few days before

he came for treatment. The only point noted on examination was a slight but decided tenderness when the right kidney was palpated. The urine contained no blood, pus, albumin, or tubercle bacilli, and beyond a few uric acid crystals nothing abnormal was made out microscopically. An X ray examination showed a small calculus in the pelvis of the kidney. The kidney was therefore exposed by an extraperitoneal incision with a view to removal of the stone, and a tumour was found on the convex border of the kidney, which was therefore removed with the stone *in situ*. The tumour was microscopically a cystadenoma.—The PRESIDENT recalled a case of a large abdominal tumour which he thought was an ovarian cyst, but it proved to be a cystadenoma of the left kidney. Mr. Ball's patient was to be congratulated on having the cyst removed when it was of small size.

Dr. CRAWFORD demonstrated an intestinal drainage trough planned as an effectual means of quickly emptying intestine distended with gas and fæces while preserving the surgeon's gloves and the patient's peritoneum from contamination. The apparatus consists of a metal trough closed at one end by a strong rubber dam, the other leading into a funnel attached to a long piece of rubber tubing. Two long intestinal clips rest in notches cut in the wall of the trough, and the whole is supported on two flat plates of metal. A hole is cut centrally in the dam and the assistant presses a distended loop of bowel against this from the outside, so that a portion of the wall protrudes into the vessel. The operator catches this protrusion with the intestinal clips and secures it by slipping their handles into the notches, thus stretching the rubber and providing a watertight contact. The intestine is then emptied and the cut sutured, using a needle-holder and tying the sutures with a forceps so that there is no risk of infecting the gloves.

MEDICO-LEGAL SOCIETY.—An adjourned discussion of the paper by Dr. Robert Armstrong-Jones upon the urgent need for legislation to permit of the treatment without certification of early cases of insanity, the so-called incipient insanity, took place on Jan. 20th last at 11, Chandos-street, Cavendish-square, W., under the chairmanship of Earl Russell. The paper was published in full in THE LANCET of Jan. 17th, p. 195.—Dr. C. Hubert Bond, one of the Lunacy Commissioners, in opening the discussion, pointed to the need for safeguarding early cases of mental disease against those persons desirous of making money out of their affliction. He referred to the shame felt by the friends of mental cases when it was necessary for them to undergo treatment and the need for privacy which tended at times to overshadow the patient's welfare. He suggested that the term "incipient" would need to be carefully defined to prevent abuse, and it must possibly have application to a time limit from the first onset of symptoms, and to apply to the first attack, or only the early stages of subsequent attacks. He was against an official list of homes, as this might tend to the extension of licensed houses; and he was not officially in favour of what has been described as "single care"—particularly if a definite line of treatment had to be followed. He expressed the sympathy of the Lunacy Commissioners with the desire for greater freedom to treat mental cases in their earlier stages, but with due safeguard against abuse.—Mr. John Carswell described the system in vogue in Scotland for the poor insane, and pointed out the closer connexion between lunacy administration and that of the Poor-law in Scotland than in this country. In Scotland it is also permissible to treat cases of insanity in private homes for a period up to six months without certification, but with notification from the medical attendant that this course was desirable in the interests of the patient.—Mr. James Devon, one of His Majesty's Prison Commissioners for Scotland, also spoke of the necessity for recognising the need for early treatment, and the advantage to the sufferer if this could be done without sending him into the asylum.—Dr. F. S. Toogood described how much was being done in the Lewisham Infirmary under the present law, which admitted a needy case into the Poor-law infirmary and where such a case could be treated for 28 or 31 days under the present lunacy law. He stated that nearly 50 per cent. of all the cases got well within that period and were thus saved from the stigma of the lunacy certificate, which implied a money saving also to the guardians, who were thus freed from the expense connected with certification, removal, and maintenance of the patient during detention in the asylum.—Dr. Henry Rayner quoted his experience in the out-patient department of St. Thomas's Hospital, and was entirely in favour of a change in the law which he himself had been advocating for many years.—Mr. P. T. Blackwell urged that greater freedom should be allowed in treating mental cases in the early stages subject to certain safeguards, and his remarks were supported by Mr. M. I. Finucane.—Dr. C. T. Ewart warmly supported the scheme, and Mr. H. F. Keene, the clerk to the Asylums Committee of the London County Council, related what had already been done by his committee, and he outlined the proposals in respect of treatment in the new Maudsley Hospital.—Sir William J. Collins also summarised the discussion in a clear, eloquent, and practical speech, and Dr. Robert Armstrong-Jones replied.—The following resolution was then formally proposed by Earl Russell and unanimously agreed to:—

That this meeting of the Medico-Legal Society is of opinion that early treatment of incipient insanity without certification will be advantageous, and that the Council be authorised to take such steps as they may think necessary to support legislation to effect this object.

There was a full attendance of members and visitors.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held in Manchester on Jan. 16th, when Dr. J. H. Willett (Liverpool) was elected President.—Dr. W. E. Fothergill (Manchester) described a case of Fatal Toxæmia of Pregnancy complicated by Vesicular Degeneration of the Chorion. A woman, aged 26, was admitted as an urgency during the seventh month of her third pregnancy. She was delirious. The abdomen was enormously distended by free fluid. The legs and labia were much swelled. The urine contained a large quantity of albumin. The os was closed and there had been no bleeding; it was dilated under ether and the hydatid mole was then diagnosed. The fluid having been removed by an abdominal incision, supravaginal hysterectomy was rapidly performed. The uterus was the size of one eight months pregnant. Its wall was everywhere very thin, but it was not perforated by villi. The whole cavity was filled with vesicles of degenerated chorion. The ovaries were normal. The patient improved for a time, she became rational, took food well, and was free from œdema and hydroperitoneum. Later the toxæmia from which she was suffering on admission regained the upper hand. The legs and labia again swelled and the abdomen once more became filled with fluid. The delirium returned, albumin reappeared in the urine, and the patient died 27 days after the operation. Unfortunately no post-mortem examination was permitted.—Dr. J. Howie Smith (Stockport) showed a Uterus Didelphys, both horns of which had been pregnant at separate times. After giving birth to a macerated premature fœtus the placenta was adherent and the patient died from shock. The uterus was in two completely separate halves which were only joined between the cervices. One-half had been pregnant some years previously and the cervix was much hypertrophied; the other was the one from which the recent child had been delivered.—Dr. H. Leith Murray (Liverpool) read a note on three cases of Pyelitis Developing after Delivery. The cases were atypical (1) in presenting no localising signs or symptoms; (2) in showing a "continuous" fever; (3) in the small amount of pus present in the urine of patients rather seriously ill; and (4) in the onset on the day following delivery. He was inclined to think that this type might contribute to puerperal morbidity more largely than was thought. The condition easily eluded diagnosis if the urine was not centrifuged. Vaccines were of marked service when intelligently administered. The action of urotropin, aided by acid sodium phosphate, should always be controlled by an investigation of the formalin actually formed in the urine; the larger doses of Thomson Walker were strongly recommended.

ROYAL ANTHROPOLOGICAL INSTITUTE.—The annual general meeting of this institution was held on Jan. 20th, Professor A. Keith, the President, being in the chair.—After the reports of the secretary and the treasurer had been read and adopted and the council for 1914 elected, the President gave an address on the Reconstruction of Human Fossil Skulls. He maintained that the ordinary anthropological methods which were employed for the examination and

description of complete skulls were not applicable to fragmentary fossil skulls. During the last six years he had endeavoured to discover and perfect methods which might be employed in the reconstruction of skulls from fragments. Recently fragments of a human skull, representative of the pieces of a fossil human skull found at Piltdown, had been submitted to him for reconstruction. A cast of the original skull was kept by those who submitted the fragments to him. There was no apparent trace on the fragments of the middle line along the vault. The reconstructed skull with a cast of the original was submitted to the meeting. The cranial capacity of the original skull was 1395 c.c.; the estimated capacity of the reconstruction was 1415 c.c. As regards width and auricular height the reconstruction and original were in almost complete agreement—the difference being less than 2 mm. In length, however, there was a considerable discrepancy, the reconstruction being 5 mm. longer than the original. The difference was due to the peculiar character of the forehead of the original and also to a mistake as to the probable sex of the skull. The reconstructed skull had been provided with eyebrow ridges of the male type, whereas in the original they were definitely female in character. Tracings of the reconstructed skull were exhibited side by side with similar tracings from the lecturer's reconstruction of the Piltdown skull to show that the problem of reconstruction was the same in each case, and that in all dimensions the cranial cavity of the Piltdown skull was larger than the test skull submitted to him.—At the close of the address Professor G. D. Thane, in moving a vote of thanks to the President, expressed his admiration at the fidelity with which the task of reconstruction had been carried out, and the exact methods which had been employed by the lecturer in his task.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held at St. John's Hospital, Leicester-square, on Jan. 20th, Dr. Morgan Dockrell, the President, being in the chair.—Clinical cases were shown by Dr. J. L. Bunch, Dr. W. Griffith, Dr. S. Gooding, the President, and Dr. W. K. Sibley, the last-named of whom opened an adjourned discussion on a paper by Mr. W. Hampson on the Dosage of X Rays.—Dr. Griffith and Dr. Kempster joined in the discussion, and Mr. Hampson replied.

ROYAL METEOROLOGICAL SOCIETY.—The annual general meeting of this society was held on Jan. 21st at the Institution of Civil Engineers, Mr. C. J. P. Cave, M.A., the President, being in the chair. The council, in their report, referred to the various branches of work which had been carried on by the society during the past year. These included researches in the upper atmosphere, meteorological lectures, the collection of phenological observations, and the commencement of the preparation of a series of normal values of the climatological elements of the British Isles. The President presented to Mr. W. H. Dines, F.R.S., the Symons Gold Medal for 1914. Mr. Cave, in his presidential address, dealt with the subject of Upper Air Research. He pointed out that research in the upper air may be by means of manned balloon with observer and instrument, or by self-registering instruments sent up in kite, captive balloon, or free balloon. Kites were first used for this purpose by Dr. Wilson, of Glasgow, 1749; and also in Arctic expeditions in 1821 and 1836. The box kite and the use of steel piano wire instead of line enabled greater heights to be obtained. The use of kites was not taken up in England till 1902, when Mr. Dines flew them from a steamer. The President next referred to the various types of instruments used in the research. Rubber balloons are usually used, and as they ascend they tell of the winds above the surface, a special theodolite being used for observing balloons. The International Commission for Scientific Aeronautics directs the studies for upper air research and special days are arranged for international ascents of balloons and kites. The first great result of these researches has been the discovery that the atmosphere is divided into the troposphere, where the air is in constant movement, horizontal and vertical, and the stratosphere, where turbulent motion seems to cease. The stratosphere begins at about 7·5 miles in these latitudes. The method of investigation is new, but it seems as though changes of weather do not begin at the surface of the earth, but are dependent upon movements taking place about 7·5 miles up.

Reviews and Notices of Books.

Studies in Cancer and Allied Subjects.

From the Departments of Zoology, Surgery, Clinical Pathology, and Biological Chemistry. Conducted under the George Crocker Research Fund at Columbia University. Vol. III. New York: Columbia University Press: London: Henry Frowde. 1913. Price $5.00. Pp. 308.

VOLUME III. of the George Crocker Special Research Fund deals with studies from the Departments of Zoology, Surgery, Clinical Pathology, and Biological Chemistry, and includes over 30 papers, some of which, however, are comparatively short and are to be regarded as what the Germans call "Vorarbeiten."

From the Department of Zoology we have first of all a report of the work of the department (1909–11). Next, Gary N. Calkins gives an account of Regeneration and Cell Division in Uronychia and the Effects of Mutilations by Cutting on Paramœcium. Both are substantially reprints from the year 1911. The regeneration problem in uronychia was studied in relation to cell division. It has been generally assumed that a protozoon is able to regenerate at all times with equal facility. This is found not to be the case. This organism when cut takes more than twice the time to divide—three days—than under normal conditions. To explain this it is assumed that substances are formed in the nucleus and transferred to the cytoplasm, where they, or the products of their activity, accumulate until a condition analogous to saturation is reached. Cutting the cell at this period results in the exhaustion of these substances by the process of regeneration, so that cell division is retarded in forms where such division is not already started. Are these hypothetical formative substances of the nature of enzymes? In the cutting experiments on paramœcium it was seen that in addition to profound effects on the power of division of the cells themselves, abnormal growths or "monsters" were formed. In uronychia the power of regeneration is a factor of cell age, increasing as the cell grows older after division, until a maximum power is attained just prior to cell division. In paramœcium the regeneration is very poorly developed, and the nuclear apparatus is more concentrated. From paramœcium to a cancer cell is a far cry, but in general biology a cell is a cell and an organism an organism, regardless of the position in the animal scale, and biological principles are applicable to all. The experiments show that even a minute mutilation of the cell may throw the entire mechanism out of gear, with loss of the power of regulation. In a divided paramœcium, if the nucleus is injured by the knife, neither part lives more than a few hours. Cell division and cell regeneration are entirely independent phenomena.

Then follow short papers on Growth of Tissues under Experimental Conditions, Spontaneous Tumours, Efforts to Bring about Chronic Irritation, Earthworm Experiments, by F. D. Bullock. The same author, along with G. L. Rohdenburg and others, gives an account of Tumour Tissue in Collodion Sacs, Retrograding Tumours, Inoculation with Two Types of Tumours, Effects of Chemical Irritants on the Type of Tissue Resulting from Chronic Irritation, and the Relation of Certain Internal Secretions to Malignant Tumours. There is a short note by P. J. Johnson on Data on Tumour Growth in Relation to Age and Sex of Rodenst.

Mice were inoculated and rats with sarcoma. In some of the communications the number of experiments is very small. The paper on the effects of chemicals after chronic irritation (1911, reprinted) is suggestive. In experiments on rats the most noteworthy results were obtained after injection with xanthin. The investigations, admittedly incomplete as they are at present, suggest that perhaps the end or intermediate products of protein metabolism may affect, not only connective tissue, as xanthin apparently can, but also the epithelial structures. The conclusions drawn from the research on internal secretory glands and tumour growth are to a large extent negative.

From the Department of Surgery there is a reprint (March, 1912) on the Development of the Blastoderm of the Chick *in vitro*, based on the work of Harrison (1907) on the growth *in vitro* of nerve fibres of the frog embryo, of that of Carrel and Burrows, and other transatlantic investigators. From the Department of Clinical Pathology there are three papers by William H. Woglom, entitled "Resistance Produced in Mice against Transplanted Cancer by Auto-inoculation of the Spleen" (published in 1910); "Mice Immunised Subcutaneously are Resistant to the Implantation of Cancer in Internal Organs" (reprinted from THE LANCET of July 8th, 1911, p. 92), and "Contributions to the Individuality of Carcinomata" (published 1911).

From the Biological Department there is first an account of the original programme set forth by William J. Gies. The difficulty of obtaining access to "satisfactory cancerous supplies from human beings and to study cancer patients" led to investigations in directions other than those first proposed. There are five contributions on Methods for the Diagnosis of Cancer, by J. W. Weinstein, Jacob Rosentloom, and others, dealing with, *inter alia*, the tryptophan and glycyltryptophan tests for cancer of the stomach, and the importance of colloidal nitrogen of the urine in the diagnosis of cancer. Then follows an account of the composition of protoplasm and the nature of the structural and dynamic relationships of cell constituents and products by various contributors, and a Study of Lipins—i.e., of lipoids. As to "the glycyltryptophan test of Neubauer and Fischer (1909), it yields positive results in practically all cancer cases, and hardly ever in any others." These tests are obviously of import for the clinician. For details, technique, and sources of errors of the tests, and the data on which the above conclusion is based, we must refer to the original paper. The author states: "I am confident that the tryptophan test out-ranks every other available laboratory means for the diagnosis of cancer of the stomach." The report on the lipins is particularly interesting. These substances play an important part, not only in relation to the enveloping membranes of cells, but also to the cytoplasm itself, of which they form an integral part. Throughout the text the work of the Imperial Cancer Research Fund is freely drawn on and duly acknowledged.

Kurzgefasste Lehre von den Knochenbrüchen.

Von Dr. F. de QUERVAIN, unter Mitarbeit von Dr. TH. CHRISTEN, Dr. H. ISELIN, und Dr. H. ZUPPINGER. I. Teil. Leipzig: F. C. W. Vogel. 1913. Pp. 140. Price, paper, 9 marks; bound, 10 marks.

THE principles of treatment of fractures in this country and in Germany have differed so much in the past that a review of the differences is useful, and probably each country may with advantage learn from the other. The present volume, the first part of a treatise upon fractures by these well-known Swiss surgeons, deals with the principles involved in the production of fractures, in the deformities produced, and in the methods of treatment. It deserves attention, for in it is included a most careful study of theoretical considerations, as well as a very complete account of methods of treatment, more particularly by continuous extension (comparatively new apparently in German countries) and by the use of the semiflexed position of joints.

Continuous extension in the treatment of fractures is old; it dates from the time of Avicenna. But so far as Germany is concerned its development has been to a large extent arrested during the nineteenth century by the attention paid to complete immobilisation by such methods as the application of plaster-of-Paris. The principle of the relief of tension in the muscles by the use of the semiflexed position, together with that of the fixation of the joints above and below a fracture, was enunciated for the first time by Pott. These principles also have been rather neglected, although they deserve a careful study. Perhaps there is a tendency to put a little too much stress upon the production of deformity in fractures by the pull of muscles, and to pass over the displacement due to the direction of the force of the original injury and to the action of gravity. The differentiation of displacements due to these forces, and not liable to recurrence after reduction, from those due to the action of muscles which do tend to recur and therefore require the use of a continuous extension, is an essential preliminary to the enunciation of the principles of treatment of fractures.

Most of the methods of treatment referred to in this volume have at some time been used in this country; some have survived to the present day; others—for example, the use of the semiflexed position—have disappeared; but in any case Professor de Quervain's very careful examination of principles is worthy of study by all those interested in the treatment of fractures.

Epidemic Infantile Paralysis (Heine-Medin Disease).

By Professor PAUL RÖMER. Translated by H. RIDLEY PRENTICE, M.B., B.S. Lond., M.R.C.P. Lond. With 57 illustrations in the text. London: John Bale, Sons, and Danielsson. 1913. Pp. 208. Price 7*s.* 6*d.* net.

Professor Paul Römer's book on epidemic poliomyelitis is already familiar to the neurologist and physician conversant with the German language, and it has justly earned a notable reputation both for the experimental work of its author and for his fine appreciation of the difficulties and problems that the disease still presents from the biological and public health points of view. We compliment Dr. Prentice on his recognition of the wider eminence which the book deserves, and also on his admirably smooth rendering of the original German.

A full and comprehensive description of the various clinical types of the disease as it occurs in man is followed by an excellent chapter on the etiology of the disease, in which the author's experiments on apes are carefully narrated and their significance analysed. The chapter on the pathology and pathogenesis of the disease leaves nothing to be desired for complete and critical investigation. The epidemiology of poliomyelitis, the possibility of immunity and immunisation, experiments with specific antibodies and with drugs, and the

question of prophylaxis and State regulation, are other topics handled in the same judicious and discriminating way. There is a bibliography of some 20 pages as well as a good index.

In its English garb we are convinced that Professor Römer's text-book will attain that wider circulation and appreciation which it deserves.

The Mutilated Hand and the Workmen's Compensation Act, 1906, having Special Reference to "Missing" Fingers.

By J. J. SCANLAN, L.R.C.P. & S. Edin., D.P.H. London: The Scientific Press, Limited. 1913. Pp. 98. Price 2*s.* 6*d.* net.

THIS little volume is neither a legal nor a medical text-book, but it will be found a conveniently arranged and instructive guide by members of either the medical or the legal profession who are engaged in compensation cases. Devoted as it is to the study of one important group of accidents coming up for compensation in the county courts, the book contains many useful and practical suggestions for the benefit of medical examiners, advocates, and arbitrators; yet it is not sufficiently bulky to rank as an exhaustive treatise upon a subject the further study of which may be pursued, if necessary, through the pages of other works.

The author has been struck with the abuse that has arisen in claims for damaged hands through the absence of any schedule of fixed amounts for definite injuries. He is inclined to the opinion that sufficient data now exist for the framing of such a schedule in the case of major accidents (such as those involving most of the fingers), subject to every case receiving due consideration upon its surgical, medical, and practical merits. County court judges who have awarded compensation for the loss of fingers will do well to study Mr. Scanlan's accounts of workmen who, having spent their "lump sums," have returned to work at full wages. Some of the points also which the author makes with regard to the objects to be aimed at in assessing and applying compensation of this kind might be studied usefully by members of the legislature anxious to assist the working classes, as well as by judges and those interested as expert witnesses.

Treatment of Internal Diseases.

By Professor NORBERT ORTNER, of the University of Vienna. Edited, with additions, by NATHANIEL BOWDITCH POTTER, M.D., Assistant Professor of Clinical Medicine at Columbia University, New York. Translated by FREDERICK H. BARTLETT, M.D., Instructor of Children's Diseases at Columbia University. Second edition in English, revised and reset from the fifth German edition. London and Philadelphia: J. B. Lippincott Company. Pp. 643. Price 21*s.* net.

THE fifth German edition of this well-known work, which is intended alike for practitioners and students, contains so many alterations from and additions to the previous ones that it has been found necessary to revise completely and reset the translation for the second English edition.

The work is entirely confined to a consideration of the treatment of internal diseases, and physiology and pathology are referred to only to indicate the principles of rational treatment. Throughout the whole volume Professor Ortner emphasises the importance of the mechanical, dietetic, climatic, hydrotherapeutic, and other extra-medicinal methods, giving judicious reasons for those selected. A description follows of these methods with a discussion of the applicability of certain drugs, their respective advantages, disadvantages, and limitations. The author adds useful prescriptions from his own experience and that of others, and so leaves the practitioner who studies this book better prepared to meet etiological indications, and the various contingencies which arise and require symptomatic treatment.

Professor Ortner's remarks are of an essentially practical character, and will be found of special value for reference—that is to say, the book may be consulted as an aid in actual practice. The various diseases are taken in order, commencing with the disorders of the circulatory organs, and detailed descriptions are given of the therapeutical measures which should be adopted. The prescriptions have been altered to conform to the American Pharmacopœia, and the equivalents in the English scale of measures have been added to the metric quantities. In this new edition there are a number of changes in the prescriptions and in the indications and recommendations for modern drugs. The references under climatology, hygiene, and dietetics have been adapted to the needs of the American practitioner and student, but although the work is intended primarily for American readers, practitioners in this country should fully appreciate the value of the information to be gleaned from a study of Professor Ortner's observations. Numerous practical suggestions will be found scattered through the pages of the book.

Treatise on General and Industrial Organic Chemistry.

By Dr. ETTORE MOLINARI. Translated from the second enlarged and revised Italian edition by THOMAS H. POPE, B.Sc., A.C.G.I., F.I.C. With 506 illustrations. London: J. and A. Churchill. 1913. Pp. 770. Price 24*s.* net.

THIS volume is a companion to the "Treatise on General and Industrial Inorganic Chemistry," by the same author, which was reviewed in our columns of Feb. 1st, 1913. The translator of the work on industrial inorganic chemistry was Dr. Ernest Feilmann, and the translator of the present volume is Mr. Thomas H. Pope, of the School of Malting and Brewing in the University of Birmingham. Both translators have adopted much the same methods in rendering the Italian into English, prices in general being given in British currency, while temperatures throughout are given according to the centigrade scale. It would have been an advantage, however, if the translator had included a table of equivalents of English and Italian measures. That the applications of organic chemistry in the industries are as important and numerous as the applications of inorganic chemistry is to some extent illustrated by the fact that both volumes are of much the same size, the work on inorganic industrial chemistry claiming 704 pages and that on organic industrial chemistry 770 pages. The development of organic industrial chemistry has been comparatively recent, and probably its greatest stimulus has been the foundation of the coal-gas industry, which gave rise to an almost illimitable series of valuable products that have found useful application in human affairs. We need only mention the output of hydrocarbons, dyes, disinfectants, medicinal synthetics, and ammonium salts. When, further, we bear in mind that soaps, glycerine, alcohol, sugar, milk products, textiles, tannins, and so forth, count as products of industrial organic chemistry we

obtain an idea of the ground traversed in this volume.

It is due to the author to point out that his treatment of the subject matter is cosmopolitan in character, and it would be a mistake to suppose that because the book is the work of an Italian authority the technique described applies only to local methods. This is not the case, for our examination has shown that the author has been careful to give an account of the technological methods adopted in all the manufacturing countries which take an important place in the industrial world. A very valuable feature of the book is the inclusion of the statistics bearing upon production, exportation, and importation in different countries, while the figures given, which refer to the prices of various commodities to date, will also be appreciated by the technological student. There is not much of direct interest to the medical reader, but there is a vast amount of information bearing upon the important position which applied chemistry occupies in industrial affairs. To those attending a course of instruction in chemistry with special reference to industrial applications the book should prove of distinct service.

Les Hystérotomies Vaginales en Obstétrique.

By Dr. ANDRÉ WILHELM, de la Faculté de Médecine de Paris. Paris: Legrand. 1913. Pp. 244.

VAGINAL hysterotomy is not regarded with great favour in France, and the author of this monograph has done well to collect for the information of his fellow practitioners most of what is known about this operation. As he shows, the procedure permits of the rapid evacuation of the uterus when the cervical canal is closed or incompletely dilated, while the modifications produced by pregnancy in the cervix and lower uterine segment render its execution easy and without danger. In order, however, to render the operation of this character it is necessary to have a sufficiently large opening, and this can be obtained by making a median incision both of the anterior and of the posterior lip of the cervix. The accidents that may occur, such as hæmorrhage, opening of the peritoneum, tears of the uterus, and lesions of the bladder, are not as a rule seen if the technique is good. The ultimate results are generally favourable, and the small number of cases in which pregnancy has subsequently occurred show that the lower uterine segment is not permanently damaged.

Certain conditions are necessary, such as not too large a child, the absence of any pelvic contraction, or of any atresia of the vulva or vagina, and the absence of infection. In these circumstances the operation may be carried out in certain pathological conditions in which an abdominal section is impossible owing to the state of the mother, while the condition of the cervix contraindicates any of the various procedures for its rapid dilatation. Some of the diseases for which it is suitable when the uterus is to be emptied are eclampsia, retroplacental hæmorrhages, and grave heart disease. The operation should not be practised in cancer of the cervix or in cases of placenta prævia, but it is particularly useful in cases of premature delivery when it is necessary to empty the uterus rapidly. Dr. Wilhelm also considers that this measure might be employed for the rapid delivery of the moribund mother or immediately after her death. Finally, he concludes that the operation is of real value and that it should find a place in the practice of the French obstetrician.

A Clinical Manual of Mental Diseases.

By FRANCIS X. DERCUM, M.D., Ph.D. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 425. Price 13*s.* net.

THIS work, based upon the lectures annually delivered by the author at the Jefferson Medical College, Philadelphia, is designed for both the practising physician and the medical student. With the aid of the descriptions given of the various symptoms presented by patients suffering from mental disorder the student should be able to form a clear idea of the phenomena he is likely to be confronted with in practice and of the treatment appropriate thereto; but whether his conceptions of classification in psychiatry are likely to be clarified, or his confidence in the most up-to-date psychological interpretations of mental morbid phenomena is likely to be increased, is open to question. Indeed, we are inclined to sympathise with the most expert exponents of psychiatry in their endeavours to find a footing in the shifting sands of classification, though even this is a small matter as compared with the welter of opinion through which morbid psychology is passing. "Melancholia-mania," "heboid-paranoid" and "neurasthenic-neuropathic" groups of symptoms are terms over which many may delight to wrangle, but their close definition is difficult and a general consensus as to the possibility of fitting clinical facts to the comprehensive titles suggested for the various syndromes almost impossible to obtain. The borders of dementia præcox, of maniacal depressive insanity, and of paranoia alternately expand and contract with such rapidity that one can only admire the mental agility of those who can intelligently follow the changes which to most are extraordinarily perplexing. We believe, however, that for the student and for the practising physician, except perhaps for those who are of opinion that much knowledge is implicit in a bulky nomenclature, there is no greater boon than the presentation of clear pictures of the symptoms of mental disorder. Such pictures have over and over again been successfully drawn, and in the book before us we have yet another example of descriptions of disease which, one can be confident, tally with everyday experience.

The Diseases of Children.

By HENRY ENOS TULEY, M.D., late Professor of Obstetrics, University of Louisville. Second revised edition. With 106 engravings and 3 coloured plates. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1913. Pp. 684. Price 24*s.* net.

THE second edition of Professor H. E. Tuley's book gives a very complete account of the common diseases of childhood, but he very carefully excludes all reference to the rarer diseases and to those pathological and clinical curiosities which are the breath of life to the professional pædiatrician. As a late professor of obstetrics in the University of Louisville the author might naturally be expected to illustrate his teaching with frequent references to the manifestation of disease in young infants; but as a matter of fact he draws very little from his obstetric experiences, and throughout his writing he leaves the reader under the impression —no doubt quite a wrong one—that he is more familiar with disease as manifested in the adult than with the special characteristics of disease during the ever-changing periods of childhood.

The book, despite its bulk, does not contain a

large amount of matter, for its pages are printed in very large, and indeed very excellent, type, with liberal paragraphing, and subheadings are numerous. But we cannot help thinking that the printer (or the author) has made a mistake in heading each page with the title of the chapter and not with that of the particular subsection with which it corresponds. Some of the chapters are very freely subdivided. For instance, that on general diseases includes the following olla podrida of pathological conditions, typhoid fever, rheumatism, diabetes mellitus, tuberculosis, tubercular meningitis, tubercular peritonitis, pellagra, malaria, and syphilis; and each one of these conditions is treated in a separate section, but all are weighted with the comprehensive title, "General Diseases." In the chapter on Contagious Diseases, where again the inclusive title is unfortunately used at the top of each page, the omissions are grave, repeated reference to Koplik's spots does not hide the gaps, and indeed the whole of this chapter might have been taken from a general text-book of medicine published at the end of the last century.

The outstanding feature of Professor Tuley's work is his persistent refusal to acknowledge the rearrangements and reclassifications of disease which the advances of bacteriology have rendered almost imperative. For instance, B. coli and pneumococcic infections are regarded not so much as specific forms of infection vicariously attacking various organs and systems, but rather as the *causæ causantes* of intestinal and pulmonary infections respectively, and in no section of this work can we find any reference to pneumococcic infections of the appendix.

The general impression that we have formed of this work is most disappointing, but there is a redeeming feature in the chapter devoted to the subject of the control and care of milk. As an ex-president of the American Association of Medical Milk Commissions, Dr. Tuley has probably had recent experience in the developments of the milk industry in America, but in any case he has collected a considerable amount of most useful information on this subject and has included it in the chapter on Infant Feeding.

LIBRARY TABLE.

Uganda for a Holiday. By Sir FREDERICK TREVES, Bt., G.C.V.O., &c. Popular edition. London: Smith, Elder, and Co. 1913. Pp. 233. Price 6*s.* net.—Sir Frederick Treves informs us in his preface that his book is written from "the outlook of the unspecialised traveller, of the man who merely seeks 'somewhere to go to,'" and this may explain the air of boredom which, it seems to us, pervades the book. Sir Frederick Treves touched only the fringe of Uganda and the major part of his book is taken up with a description of his journey to and through British East Africa. His account of the transit from Paris to Marseilles by the P.L.M. express gives the reader the impression of a bad dream, and is, we think, over-coloured, but everyone who has travelled that way will agree with the joy experienced when the traveller wakes up to get his first sight of the Midi. Aden aroused in Sir Frederick Treves sensations from which he found salvation by retiring to the ship's smoking room and turning over "the undisturbing leaves of an illustrated paper a fortnight old." The account given of Mombasa will inspire every reader with a desire to go there, so wonderful are the effects of colour and the romance of the old Arab town. From here starts the Uganda railway, which reaches Port Florence on the Victoria Nyanza after some 580 miles, passing on its way the wonderful Rift Valley. The company is modern in its methods, and from its official publications Sir Frederick Treves has extracted the following interesting items: "Ostriches and ostrich chicks will be carried in brake-vans of goods trains at owner's risk only." "Human ashes are carried in dust-tight boxes at fifth-class goods rates." To be ranked as "fifth-class goods" is even worse than being used to "stop a hole to keep the wind away." Sir Frederick Treves continued his journey by rail (with an interlude of caravan through the Rift Valley) and steamer as far as Ripon Falls, where the Nile leaves the lake. Then he returned and found the journey from the lake to the sea uninteresting, "so uninteresting that the traveller finds more diversion from a six weeks' old London newspaper than he does in a view from the carriage window." The romance of travel would seem to be almost extinct along recognised routes.

War and Women: From Experience in the Balkans and Elsewhere. By Mrs. ST. CLAIR STOBART. London: G. Bell and Sons, Limited. 1913. Pp. 239. Price 3*s.* 6*d.* net.—The author presents a clearly written and unvarnished statement of her experiences in the organisation and control of a company of the Women's Convoy Corps, during a ten weeks' sojourn in the Balkans, while giving nursing aid to the Bulgarian forces in the latter part of 1912. The corps had been invited by Queen Eleonora of Bulgaria and by the Red Cross Society and military medical authorities of that State to render assistance in the campaign against Turkey, and as Mrs. Stobart says in her opening chapter, "for the first time in history a company composed exclusively of women has had the experience of going to the front in a campaign, and of improvising and administering in a foreign country a hospital for sick and wounded soldiers." The special feature of the Women's Convoy Corps is that its services are not confined to the nursing of sick and wounded in the wards of hospitals (according to the limitations of the British Red Cross Society), but are available, when required, for sick and wounded in warfare, whatever the conditions may be. The unit numbered 16, including Mrs. Stobart, the commandant and director, two nursing sisters, four other trained nurses, six general duty members, and three women doctors. On arrival at Sofia the detachment was sympathetically received by Queen Eleonora, and then proceeded by rail to Jamboli, and across the Rhodope range and the plains of Thrace by a seven days' bullock wagon trek to Kirk Kilisse, about 40 miles east of Adrianople. Here Mrs. Stobart got ready a hospital with great energy and dispatch, starting it as a going concern within 48 hours of the arrival of the party. This was an extremely creditable piece of work, the finding and taking and cleaning and furnishing of two houses all being accomplished in this time, together with the provision of a certain amount of hospital equipment. Five wounded soldiers were admitted and cared for immediately; four hours later 50 wounded arrived from Chatalja, having undergone a six days' trek in bullock carts without any surgical aid of any kind; their condition may be imagined. Thus the Convoy Corps justified its existence immediately. Mrs. Stobart describes the life from

day to day, and gives a lively picture, incidentally disclosing her readiness of resource in emergency, and capacity for making the best of things—even the seven days' wagon journey at a kilometre and a half an hour. The language was a difficulty, not that Bulgarian is hard to learn, but because the people met with were of such various nationalities. The hospital results were extraordinary: of 729 cases only 1 was fatal; 300 of these were serious. Mrs. Stobart attributes the successful results to the healthy condition of the patients, who were of vigorous stock, to the skill and restraint of the doctors in operations, and to the extreme care taken by the sisters in the sterilisation of instruments, &c., in the theatre. We may attribute the success in some part also to the care and supervision as to ventilation and cleanliness of the hospital given by the director herself. Mrs. Stobart has great admiration for the Bulgarian ideal, the ideal of "nationhood," a condition impossible without freedom, and to attain which it was necessary to shake off the Turk. The Turk was defeated because he no longer has an ideal; "the Mohammedan faith is being annihilated by the tide of progress." We are not sure that this can be maintained of Mohammedan races generally; but we are accustomed to call the spirit of such races fanaticism rather than faith in an ideal. The authoress will not allow that war kindles "qualities of heroism"; it kindles "qualities of brutality." Her disagreement with the Red Cross Society arose from the society's decision to send out only men to nurse the sick and wounded in Bulgaria, which in her opinion signified that "a prominent organisation in Great Britain is still breathing the atmosphere of the times of our great-grandmothers," acting according to the lights of a century ago. The Women's Convoy were, however, on quite friendly terms with the male Red Cross unit at Kirk Kilisse, and the two bodies dined together on Christmas Day. The book is written in a lively style, and the authoress does not disdain to use colloquial expressions which a dozen years hence will need a glossary: "performed on their own," "I was not out for psychological study," "their left hands placed pathetically over their little Marys," are neither more nor less than vulgarisms, out of place in this interesting and well illustrated record of what can be done by women who have pluck and perseverance.

MISCELLANEOUS VOLUMES.

Mrs. A. M. USHER, the authoress of *The Management of Children* (with an introduction by FRANCIS B. RUTTER, M.D. Durh., M.R.C.S. Eng. London: J. and A. Churchill. 1913. Pp. 106. Price 1s. net), is herself the mother of 12, and consequently has had considerable experience in the management of children, but she admits that she has not had personal experience of all the casualties, mistakes, and diseases which are included in the very considerable and miscellaneous list afforded in these pages. She has acquired knowledge of the rest, however, from reliable hospital nurses and doctors. It is interesting to note that in Mrs. Usher's fully occupied life she has only found time to give others the benefit of her experiences by writing her MS. in pencil while she fed her baby. We cannot help thinking that Mrs. Usher would have been better advised to confine her advice to mothers to such subjects as may be included under the terms "nursing and domestic management." It seems a little beyond the province of a mother—even with the support of experienced nurses and doctors—to take upon herself the responsibility of advising as to treatment of such trivial matters as diarrhœa and constipation, much less on such serious matters as whooping-cough and St. Vitus's dance. And now that the pernicious practice of treating constipation by glycerine injections is becoming gradually excluded from our text-books, it seems a pity that Mrs. Usher should revive it, and recommend in addition a still more irrational therapeutic measure—namely, the administration of castor oil. There are, however, a number of useful hints to be learnt from the perusal of this little book, and chiefly with respect to the general management of the nursery.—A useful little book for general instruction is *Home Hygiene* (London: Henry Frowde and Hodder and Stoughton. 1913. Pp. 115. Price 1s.), by Mrs. HAMILTON WILLIAMS, M.B., B.S. Lond. Mrs. Williams lays down the knowledge of four things as necessary for every girl—viz., how to keep herself in good health, the best and quickest way of doing every sort of work needed in the home, the exact cost of all necessary things that she may obtain the best value for her money, and how to care for little children and when to send for the doctor. The book is divided into four parts in accordance with these four departments of knowledge. It will be seen that the author wisely, as we think, enlarges the scope of the term "hygiene" to cover a wide field. The book is characterised by sound knowledge and common sense all along the lines indicated, and is written in perfectly plain language. It can be highly commended.

Three uncoördinated booklets may be mentioned here. Medical societies are now so numerous and comprehensive that it hardly seems as though there were room for any addition to their number. But should any members of the profession contemplate establishing a new one, some useful hints may be gained from *The Ideals and Organisation of a Medical Society* (London: J. and A. Churchill. 1913. Pp. 51. Price 2s. net), by Dr. JAMIESON B. HURRY.—*Some Main Issues* (London: Chapman and Hall, Limited. 1913. Pp. 109. Price 3s. 6d.) is a collection of essays by Dr. G. WALTER STEEVES on such subjects as Toleration, The Child, Appearances, Letter Writing, Gratitude, The Book Collector, and so forth. They are pleasantly, if not profoundly, written, though every reader will doubtless find something concerning which to disagree with the author.—*Wet Magic*, by E. NESBIT (London: T. Werner Laurie, Limited. Pp. 274. Price 6s.), is a sort of modern fairy tale about some little boys and girls who have wonderful experiences with mermaids and magic. A 10-year old child, whose opinion of it was invited, said that it was "All right."

JOURNALS AND MAGAZINES.

Surgery, Gynæcology, and Obstetrics. December, 1913.—In this number an account is given of some recent experimental work that has been done by Dr. Nathaniel Allison and Dr. Barney Brooks, of St. Louis, on the subject of the tissue changes which result from the interposition of certain substances between joint surfaces. The first success with the interposition method of treating ankylosed joints appears to have been obtained by Helferich, and he employed a piece of the temporal muscle. This operation was performed for ankylosis of the temporo-maxillary joint, and the case was shown in 1893. Rochet, Hoffa, Nélaton, and others also employed muscle flaps; Gluck used skin flaps; Chlumsky and Hoffa employed non-absorbable material, such as plates of magnesium, silver or tin, or sheets of celluloid or rubber; Hoffa used decalcified bone; Murphy employed flaps of fascia; and Kirschner showed that flaps of fascia which had been detached from their attachments could be transplanted between the bones. Chromicised pig's bladder has been used by Baer. Various other experiments have been performed for the purpose of studying the histological changes in the joint; in many cases a very definite cavity is formed, but opinions differ as to the mode of formation of this cavity and as to the fate of the interposed material. The experiments which have been performed by Dr. Allison and Dr. Brooks were made with the intention of deciding these important points. The knee-joint of the dog was employed and the same operative method was followed in all the cases. The joint surfaces of the patella and the anterior surface of the condyles of the femur were denuded of their cartilage; the substance to be studied was placed between the bones and fixed by fine silk sutures. In all 26 experiments were made. The authors employed the following substances: Cargile membrane, free fascia from the fascia lata, pedunculated flaps of fascia, chromicised pig's bladder, and fascia impregnated with metallic silver. In their paper they give full details of the results obtained, and these may be summarised as follows. In

all the experiments the process of healing of the joint surfaces was the same; even at the end of two months there was very little formation of new bone from the denuded area. The new bone formation seen was always under the joint cartilage which had not been removed. The denuded joint surfaces were covered at the end of five days with granulation tissue which grew from the marrow spaces, and this granulation tissue developed into fibrous tissue, and when two denuded joint surfaces were in close apposition this new tissue led to a fibrous ankylosis. When a piece of fascia lata was interposed between the two bones the direct union of the denuded joint surfaces was prevented only in case the fascia underwent absorption, for where the transplanted fascia persisted in parts the surviving islands acted as adhesions between the joint surfaces. When fascia is used it appears that it is better to use a free flap, for the pedunculated flap forms an interarticular band which checks joint-movement. When chromicised pig's bladder was used there was much more fibrous tissue formed, and in every instance the joint surfaces were more or less completely united. In all cases it appears to be essential that the transplant should be absorbed, otherwise no cavity is formed and ankylosis results.

British Journal of Inebriety.—The first place in the January number of this journal is very fittingly occupied by Sir Thomas Clouston's address on Some Psychological and Clinical Aspects of Alcohol, delivered as the fifth Norman Kerr memorial lecture at Edinburgh on Nov. 3rd, 1913. Reviewing the question in the light of his ripe clinical experience, Sir Thomas Clouston emphasises the importance of recognising the wide range of individual variation in the mode of reacting to alcohol and in susceptibility to its injurious influences. While this fact is a warning of the risk of fallacy in any general conclusions, it may nevertheless be confidently asserted that the pleasant personal and social effects of alcohol can only be safely obtained in fully developed healthy men with a reasonably good nervous heredity, and even to such favoured subjects it is harmless only when taken in strict moderation. For women, for adolescents, and for persons of neurotic constitution alcohol is always dangerous. In view of the greater tendency to tissue changes when the more concentrated alcoholic liquors are taken, the lecturer would advocate the statutory prohibition of the stronger drinks except for medicinal purposes. The address closes on an optimistic note, with a reference to the marked diminution of alcoholic excess during the last century amongst the more intelligent and self-respecting classes of the community. A continuance of this tendency may be looked for with the spread of education, the improvement of social conditions, the growth of eugenic ideals, and, especially, with a more general knowledge of the dangers of alcohol to the individual and the race. In a very interesting paper on Institutional and National Intemperance Mr. C. J. Bond quotes statistical evidence showing the decrease in the consumption of alcohol in hospitals and infirmaries in this country during recent years. A table showing the total and percentage expenditure on dressings, provisions, milk, and alcohol for the year 1912 in 46 British hospitals provides some remarkable contrasts of practice, the explanation of which presents a good many difficulties. Dr. G. Basil Price contributes a summary of reasons for pressing on the promised amendment of the Inebriates Acts on the lines of the recommendations of the Departmental Committee of 1908. The Journal also contains a very brief account by Mr. T Neild of the International Temperance Congress held at Milan last September.

The British Dental Journal.—The issue for Jan. 15th contains the abstract of an interesting paper by Dr. T. von Beust, of Dresden, on the Etiology of Dental Caries. The author considers that the chemico-parasitic theory of caries is untenable. He thinks that caries is a disease which has its origin within the tooth, and believes that a process of metabolism is possible in the enamel, and that this tissue may possess a high degree of reactive power. An article on the Use of X Rays in the Practice of Dental Surgery, by Mr. C. A. Clark, draws attention to the great value of films for determining the condition of the alveolar bone in periodontal disease. Mr. C. N. Peacock writes on the Formation of a Public Dental Service for Bedford, and Mr. Graham Cotterell gives an account of the Coventry Dental Clinic.

New Inventions.

TESKE'S "STANDARD" AUSCULTATION SET.

WE have received an ingenious form of stethoscope with several new features from Messrs. C. A. Teske, Limited, of 33, Percy-street, Tottenham Court-road, London, W. Both the chest piece and the binaural attachment are capable of various modifications designed to render the instrument more delicate and more comfortable.

The chest piece consists of a stem, provided with a thumb rest, and two finger rests in each of which there is an aperture communicating with the air space of the stem. The stem expands into a small bell, which can be used as an ordinary stethoscope. The bell is hinged on to the stem in such a manner that it can be moved through an angle of 90°, and thus used to examine the posterior axillary regions or bases of a patient lying in bed and too ill to sit up. In addition there is an "automatic drum" which can be fitted into the bell of the stethoscope, enabling it to be used as a stethonoscope or a phonendoscope, according to the manner in which it is applied to the chest. This drum is a modification of the stethonoscope made by the same firm, and contains a small elastic rubber diaphragm. If the chest piece of the stethoscope with the drum attached be placed lightly in contact with the chest wall the sounds reach the ear much intensified, and the instrument is said to act as a stethonoscope. If the pressure be increased the sounds are further augmented and the effect of a phonendoscope is obtained. In this case the intensity and distinctness of the sounds can be varied by moving the fingers from the apertures in the lateral finger rests. The instrument is made of gun-metal, nickel-plated, or oxidised and coated with a hard, transparent lacquer. We have tested the stethonoscope sent to us. It is well made and well finished. Used as an ordinary stethoscope it conducts the sounds well, and when the drum attachment is fixed the sounds are intensified in the manner described by the makers. It should be a useful instrument in cases where the breath sounds are weak or the cardiac sounds indistinct or distant. A new form of binaural attachment can also be supplied for use with the instrument, although it can be used with any ordinary form if the conducting tubes are of sufficient calibre. The form supplied by Messrs. Teske has two special features: the first is an adjustable spring, which is controlled by two small screws, one to adjust, the other to fix it, so that the pressure at the ears may be altered to suit the comfort of the wearer. The other feature is that the ear-pieces are attached to the tubes by short lengths of flexible metal, or by a universal joint so that they can be bent to the angle most convenient for the wearer. This is a commendable feature of the instrument.

CONGRESS OF THE GERMAN SURGICAL SOCIETY.—The forty-third Congress of the German Surgical Society will be held in Berlin from April 15th to 18th. The meeting place will, on this occasion, be the large hall of the Royal Academy of Music (Königl. Hochschule für Musik), Fasanenstrasse 1, corner of Hardenberg Strasse, not far from the railway station for the Zoological Gardens. The office of Herr Melzer, however, for the receipt of subscriptions and the issue of membership cards, will be situated, up to April 14th inclusive, in Langenbeck House (Ziegelstrasse, 10/11, Berlin, N. 24), and during the Congress in the vestibule of the Congress Hall, but owing to the press of work tickets should be obtained before April 5th. The president for the year will be Dr. W. Müller (Kaiser Wilhelmstrasse, 16, Rostock). The following principal papers are already announced: Cause and Treatment of Post-operative Abdominal Hernia (Herr Sprengel, Brunswick); Permanent Results of Thyroid Gland Transplantation in Human Beings (Herr Kocher, Berne); and Vesical Tumours (Herr Hildebrand, Berlin, and Herr Joseph, Berlin). A few weeks before the Congress further particulars will be issued.

THE LANCET.

LONDON: SATURDAY, JANUARY 31, 1914.

Coroners' Inquests on Deaths under Anæsthetics.

Is it desirable in the interests of the public that inquests should be held in all cases of death under an anæsthetic? The vexed question has been recently reopened. The coroner for Southwark, Dr. F. J. WALDO, who has contended before that inquests in these cases are beneficial-in so far that they afford an opportunity, if not for censure, at least for admonition, pointed out on a recent occasion that owing to representations made from his court the system of giving anæsthetics in a large general hospital had been carefully overhauled, with the result that the number of specially selected men serving as anæsthetists had been increased, while the fatalities from anæsthetics in the institution had become fewer. Dr. WALDO is a very wise and experienced official, and is not alone in the belief that the holding of inquests in every case of death during the administration of an anæsthetic is advantageous, since the publicity engenders greater caution, while raising the standard of excellence achieved by the persons who administer anæsthetics. Some go further than this. It has, indeed, been suggested that all patients who die during or as the result of operations in public institutions should have their deaths made the subject of a coroner's inquisition. This suggestion we do not discuss; it appears to be made in direct opposition to public interest, which demands that the officers of our hospitals should do their best without fear. The matter presents grave difficulties and complex problems enough when we are considering only the question of fatalities during the use of anæsthetics.

Mr. T. I. BENNETT, an anæsthetist to Guy's Hospital, at the recent inquest held by Dr. WALDO, while admitting that the verdicts of coroners' juries had subserved a useful purpose, accentuated the view that there is another side to the matter. The anæsthetist subpœnaed to give evidence, he contended, suffers in many ways. The coroner is not an anæsthetist, and although among coroners there are many medical men who possess great knowledge blended with considerable forensic acumen, yet it is impossible for any coroner, unless aided by expert help, to differentiate between deaths due solely to the use of an anæsthetic and those resulting from the depressed vitality of the patient, or the unavoidable collapse incident to surgical or accidental trauma. The obvious factor is the anæsthetic, which is known to be capable of producing death; the intangible is that a patient may be in a practically moribund state brought about by surgical procedure; its very intangibility prevents such a factor from receiving the attention for which it cries aloud to the expert. Yet the anæsthetist in a coroner's court may not belittle the effect of his share in the terrible eventuality, nor emphasise the dangers that must have attended his surgical colleague's manipulations in any particular case. To the heedless man it is axiomatic that some of those who have to submit to the ministrations of the skilled surgeon may die; their death is due, he believes, to causes which Providence alone can control. But death as a result of anæsthesia usually suggests to the public that something went wrong. No one was to blame, but why did it occur? Mr. BENNETT observed very justly that no note is taken of the countless thousands of successful anæsthesias; the one death looms large in the forefront of the coroner's court. This is the natural result of the accepted views about the terrors of surgical operations and the ease of producing anæsthesia. The coroner's inquiry, no doubt, was originally intended to ascertain whether a person died as a result of crime, of accident, or of natural causes; it now attempts to appraise the merits of the technical side of the anæsthesia, and the anæsthetist is placed at a disadvantage in dealing with "twelve good men and true" who incidentally are guiltless of special knowledge, so that he cannot go into technical details. He is practically being placed on trial at every one of these inquests for an offence, and his evidence is not infrequently met by that of a pathologist who knows nothing about the clinical aspects of the case—aspects which are essential to forming an accurate judgment. This would seem to indicate that whatever advantages a coroner's inquiry may have, and we submit all medical men will recognise that such advantages exist under favourable conditions, yet the inquiry is in many cases of little utility, and is useless from the point of view of scientific investigation.

In many serious cases the anæsthetist must be placed in a difficult position. His knowledge may convince him that the patient's condition is so grave as to make the attempt at inducing anæsthesia almost a forlorn hope, and yet he cannot allow the patient to sacrifice one scintilla of his chances. He may do his best, but no man can gauge what resisting power remains to the patient, and so death may follow. Strive as he may, a certain stigma rests on the anæsthetist, especially if death occurs before operative measures have commenced. Besides such considerations, another weighty aspect of the question remains. All the narratives of "deaths under anæsthetics" which are detailed at coroners' courts find their way into the daily press. The reports are compressed into a few lines, and almost invariably the death appears as if it had been caused by the anæsthetic. These newspaper paragraphs recur day after day, and the sick, and

those whose lives depend upon a successful operation being undertaken, become obsessed with an unreasoning dread of taking an anæsthetic. This dread is doubly dangerous; on the one hand, it may lead the patient to refuse treatment and betake himself to one of the many quacks who batten on such folk; or, on the other, it may throw him into a state of panic, thus engendering the worst state possible for successful and safe anæsthesia. When, then, the whole matter is looked at dispassionately we see that the advantages and disadvantages of publicity much counterbalance each other, and, further, that some changes in the law are necessary.

Hospital Statistics and the Science of Medicine.

THE numbers of patients that come under observation at a large hospital should form a basis upon which statistics of value to medical science might be founded. Experience, however, has taught that unless careful and skilled precautions are taken fallacies are so likely to arise that the final conclusions are not to be relied upon. The reasons for this are sufficiently obvious. Amongst the most prominent are the class of patients from whom the necessary information with regard to family and personal histories has to be obtained, the difficulty of always procuring a sufficient number of instances of the disease under investigation, and the manner in which the records of the cases are collected. These points were frequently apparent in the discussion on the Influence of Heredity in Disease which took place at the Royal Society of Medicine in 1908. Professor KARL PEARSON then remarked that it was extremely difficult in a London hospital to obtain material for accurate deductions, and all the staffs of large metropolitan hospitals will corroborate this. It is not that the patients wilfully make wrong statements as regards their family history, but often they are in ignorance of the true cause of the deaths of their parents and relatives, and often they have grave defects of memory. Professor PEARSON expressed the opinion that the memory of the peasant in the north of England and in Scotland is far better, and the pride of family is far more intense than in the average Londoner of the general hospital population. A sufficient number of cases is very necessary for statistical purposes, as it is evident that nothing can be more fallacious than forming opinions on a review of a small number of cases, and yet we must feel that a good many cases are recorded in an untrustworthy manner. The clinical records of our hospitals leave much to be desired, but the defects are difficult to remedy. In many of the hospitals the notes are made by students or the resident officers, and these are supervised by the registrars and the members of the visiting staff. The value of the notes, especially when taken by the students, largely depends upon the manner in which they are corrected and amended by the physicians and surgeons, and even then, although perhaps useful from a purely clinical point of view, for the purposes of obtaining statistics for any investigation they may be of little worth. Omissions which are of little consequence in one direction may have great significance in the other.

One of the most frequent uses for which statistics are prepared is to demonstrate the results of treatment. The difficulties here met with are well shown in the attempts that have been made to arrive at conclusions as to the therapeutics of pulmonary tuberculosis in hospital and sanatorium practice. In the first place, a definite diagnosis must be arrived at, and much difference of opinion, which we need not enter into here, exists in regard to the methods of diagnosis. Next, too much stress has been laid on the results obtained in a small number of cases. In order that any true criterion may be formed many hundreds of cases must be observed. Again, in hospital practice, a further and greater difficulty is experienced—namely, that after leaving the institution a large number of patients are lost sight of, so that their future progress cannot be recorded. Every effort may be made to keep in touch with discharged patients, but the number of those who do not report themselves, or cannot be heard of, is so big as greatly to invalidate the result of any investigation. In such inquiries, too, it is difficult to eliminate the personal equation. Taking all these things into consideration we see that in compiling medical statistics the services of one skilled in the science should be obtained whenever possible. This was suggested in an interesting article in *The Hospital* recently, in which it was proposed that a bureau might be formed under the supervision of a statistical committee nominated by the authorities of the different hospitals concerned. In this way certainly an orderly manner of keeping our hospital records would be much expedited.

In some other branches of medical service, however, hospital statistics may be of true value if ordinary care is taken. The results obtained in the treatment of the infectious fevers at the special hospitals are not so open to the objections we have mentioned, and the after progress of these cases may be more easily followed by the help of the health authorities. So, too, on a smaller scale in the general hospitals, the results of operations may be compared and checked. Also the frequency of complications and their results in various diseases form a subject for statistical investigation less open to fallacy. The main difficulty in instances of this nature would be to obtain a sufficient number of cases. The suggestion of a central bureau for the collection of statistics was made in a discussion at the Royal College of Physicians of London in reference to tuberculosis, and an extension of this idea might perhaps be made in other pathological directions. A director at the bureau whose formation has been

suggested, with suitable assistants trained in medicine and statistics, would be able to control investigations, laying down the manner in which the necessary information must be collected. Some of the difficulties we have mentioned might thus be lessened. And although the collection and collation of medical statistics can never be other than a difficult matter, results could surely be obtained which, being the consequence of careful study and inquiry, would aid still further the advance of the science of medicine.

The Protection of India from Yellow Fever.

IT is little more than ten years since Sir PATRICK MANSON first sounded a warning note as to the possible danger of extension of yellow fever to Indian and other Asiatic ports after the opening of the new ship canal through the Isthmus of Panama and the establishment of new trade routes from Central and South America across the Pacific. The reality of this danger has been admitted more recently by many other experts. Although up to the present time no cases of yellow fever have been reported in India, it is now generally recognised that at many Indian ports all the necessary conditions exist for favouring the spread of the malady, and that if the infection unfortunately were once introduced by ships arriving from an infected place the disease would rapidly become epidemic and cause serious loss of life. The tiger mosquito, Stegomyia fasciata, the insect transmitter of the disease to man, is present in great abundance at many Indian ports. The same remark applies to a number of seaports in other parts of Asia and in Oceania, including some in Southern Japan and China, the Malay Peninsula, the Straits Settlements, the Dutch East Indies, the Philippine Islands, Honolulu, Fiji, and Eastern Australia, especially Queensland.

We have discussed already in these columns[1] some of the possible results as regards the spread of exotic disease, including yellow fever, that might follow the opening of the Panama Canal, referring to the development of trade with backward republics in Central and South America where yellow fever is endemic, particularly the State of Ecuador and its chief port Guayaquil, known familiarly as "the pest hole of the Pacific." Quite recently Major S. P. JAMES, I.M.S., who had been instructed by the Indian Government to inquire fully into the subject, has visited Panama and travelled along the new routes which will be used when the Isthmian Canal is opened, calling at the various ports between Panama and India to ascertain their condition and preparedness for dealing with imported yellow fever infection. He has now summarised his facts and conclusions in an interesting paper published in the *Indian Journal of Medical Research* (Vol. I., No. 2). Major JAMES has looked at the subject in various aspects, not forgetting the Imperial point of view, and has dealt not only with Indian ports, but with others, such as Hong-Kong and Singapore. He believes the danger of the introduction of yellow fever to be a real one as regards Hong-Kong, but that the spread of the disease to Indian ports *vid* Singapore is only likely to occur as a secondary event, subsequent to and dependent upon infection of ports in Japan, China, Farther India. or Australia. He is disposed to think as a result of his inquiries that it is by no means certain that the opening of the Panama Canal will increase the risks of the spread of yellow fever to the extent that has been anticipated. Major JAMES may therefore be regarded as taking a hopeful view of the situation, especially as the work already done by the Isthmian Canal Commission has eradicated yellow fever from the Canal Zone. So long as the present enlightened policy is followed and practical measures are carried out in that region there is, we agree, not the slightest danger that yellow fever will again become endemic in it. There is therefore practically no risk of ships becoming infected while passing through the new water-way, or of their conveying the disease across the Pacific to Indian or other Asiatic ports. But in other areas of Central and South America where yellow fever is still endemic, it cannot be said that the same comprehensive measures to grapple with the disease and its insect host have been applied; so that should such republics develop larger trade relations by shipping with ports in the Pacific or in Asia the danger would necessarily increase. In suggesting means for securing the safety of India, and incidentally of other British ports in Asia and Oceania, Major JAMES advises that at Hong-Kong and other places immediate steps should be taken to destroy the stegomyia mosquitoes and their breeding-places, and that the arrangements in force for dealing with infected ships should be improved and extended, so that any ship-borne case may be safely and promptly dealt with. He particularly urges the Imperial Government to appoint three special medical officers possessing the necessary qualifications and experience, one of whom should be stationed in the Panama Canal Zone, one at Hong-Kong, and one at Singapore. Their primary duty would be to act as intelligence officers, to watch for the occurrence of yellow fever (and perhaps other exotic disease), to report such cases and the measures taken to deal with them, and to keep themselves thoroughly acquainted with the local and trans-Pacific shipping and the routes followed. These officers would be in touch with the local consular and quarantine officials, and would furnish to headquarters at first hand full information as to the progress and diffusion of yellow fever (and other exotic disease) in that part of the world. It is also suggested that a central intelligence bureau should be established through which India and all other British colonies and dependencies would receive immediate information concerning the incidence of

[1] THE LANCET, Feb. 10th, 1912.

the disease. Major JAMES suggests that, if the Imperial Government cannot see their way to make such appointments at once, the Indian Government should itself select three officers of the Indian Medical Service and station them respectively at Panama, Hong-Kong, and Singapore at its own expense.

We think that the appointment of these intelligence officers would be a practical measure of great importance to our Indian community. Investigations on a systematic and definite scheme should now be undertaken as to the distribution of stegomyia fasciata in Asiatic ports, and efforts should be made to discover if any other species of stegomyia, and especially S. scutellaris, so common in Asia and Oceania, can act as transmitters of the yellow fever infection to man. Renewed researches likewise should be made to settle, if possible, the outstanding problems relating to the etiology and prevention of the disease. As regards the practicability of reducing the numbers of the stegomyia mosquitoes in Indian ports, the key of the problem appears to be the provision of piped water-supplies delivered under pressure to the houses so as to obviate the storage of water in cisterns or temporary receptacles which are at once used as breeding-places by the stegomyiæ. Some ports—Madras, for instance—have a piped supply, but pressure is only put on for a short time daily, consequently in some parts of the city water has to be stored in vessels of various kinds for the next 24 hours. At Bombay the supply is intermittent, and the inhabitants have therefore to store water for domestic use. Lastly, the keeping of yards and compounds free from rubbish, such as discarded crockery, tins, bottles, and the like, is essential. Such measures as improvement of water-supplies, or keeping of backyards clean and free from rubbish and obstructions, are not only of value in the prevention of yellow fever, but, as has been pointed out over and over again in these columns, in many other ways they act beneficially upon the public health, so that money expended for these purposes is to be regarded as a good investment for any community. We hope that the authorities concerned will give their serious attention, if they have not already done so, to the advice given to them by so competent an expert as Major JAMES.

MANCHESTER ROYAL INFIRMARY.—Mr. Walter G. Carnt, the general superintendent and secretary of the Manchester Royal Infirmary, points out that the support accorded to the infirmary by out-districts is nothing like commensurate with the benefits received. He says that the annual deficiency in the infirmary's income is brought about by the lack of support in the area surrounding Manchester and Salford, for in 1912 the patients from the outside districts cost the infirmary £14,000, whilst only £2000 were received in subscriptions from the districts referred to. From one outlying district where patients cost the infirmary £260 only 16 guineas were received in subscriptions.

Annotations.

"Ne quid nimis."

ENGLISH VITAL STATISTICS FOR 1913.

FOR the information of those of our readers who are specially interested in public health matters we printed last week (p. 263) a table which has been issued provisionally by the General Register Office within a few days of the close of the year to which it relates. The mortality at all ages is now authoritatively declared for each of the main statistical divisions of England, as recently determined by the Registrar-General, with the approval of the Local Government Board. In order to render the crude death-rates strictly comparable they have been corrected or "standardised," the method adopted having been fully explained in the Registrar-General's Seventy-fourth Annual Report, notices of which have already appeared in our columns.[1] To the practical sanitarian the last column of this table will be instructive. It gives a condensed record of the incidence of infant mortality in each of the four main divisions referred to. But inasmuch as each division contains administrative areas widely differing from one another as regards the social and sanitary circumstances of the inhabitants, which presumably determine the rate of infant mortality locally prevailing, we must wait for the detailed annual report for 1913, which will undoubtedly disclose much greater local differences in this respect than those mentioned in the table. In that report we may also expect to find particulars of the loss of life at the various stages of the first year after birth, as well as of the chief causes responsible for that loss in each of the 241 administrative districts of the country. On these several points information was given in the Registrar-General's seventy-fourth report already referred to.

THE CENTENARY OF CLAUDE BERNARD.

FRENCHMEN in all ages have been mindful of their great men's achievements, and memorials of one kind and another have been erected to those who by their work and their genius have helped the progress of human knowledge. Medical heroes have been duly honoured thus. It is always agreeable to stroll through the corridors of that heterogeneous mass of buildings which is the abode of the Medical Faculty in Paris. There are to be found the memorials to the investigators who have made the Faculty of Medicine of Paris one of the foremost in the world's history. Crossing the Boulevard St. Michel and passing along the Rue des Ecoles, immediately beyond the Sorbonne, we come to an institution of an entirely different kind. This is the famous Collège de France—with its 42 professorial chairs—an institution founded by François the First; over its main portal is its proud motto, "Omnia docet." In front on a sloping grassy enclosure stand two statues, one of Dante and the other of Claude Bernard. On Tuesday, Dec. 30th, 1913, a meeting was held to commemorate the centenary of the birth of Claude Bernard, though as a matter of fact Bernard was born in July. This ceremony, at once simple yet imposing, took place in Theatre

[1] THE LANCET, Nov. 22nd, 1913 (p. 1491), and 29th (p. 1566).

No. 6, in which Bernard experimented and where he expounded his famous discoveries. M. Poincaré, the President of the Republic, was present, and the seating accommodation was all occupied long before the appointed hour, at which the railed-off part of the floor space was filled by leading members of the medical and other professions. The chairman, M. Viviani, the Minister of Education and Fine Arts, delivered an eloquent tribute to the vast services rendered by Bernard to humanity. Bergson, professor of "philosophie moderne" in the Collège de France, read a short address, and Professor Gley spoke on some aspects of Bernard's work, as also did Professor Henneguy. Professor Dastre and Professor d'Arsonval—both former assistants of Bernard—gave their personal reminiscences, and eulogised not only his work but also the goodness of his nature, his great heart and noble soul. One interesting personality was not able by reason of infirmity to be present—viz., Professor L. Ranvier, one of Bernard's early assistants, for whom, largely through the influence of Bernard, the chair of comparative histology in the Collège de France was founded. A little volume on Bernard was written some years ago by Sir Michael Foster, although Foster never saw him; but the best account of Bernard's life work is that by Professor Paul Bert, "L'Œuvre de Claude Bernard." Bert unfortunately left physiology to take up a Government appointment in Tonquin, where he ended his days. Dastre succeeded him at the Sorbonne. Bernard himself was succeeded by Brown-Séquard at the Collège de France, and when the latter retired d'Arsonval was elected to the chair of medicine that had been occupied in succession by Magendie, Bernard, and Brown-Séquard.

THE AUSTRALIAN TRIBESMEN.

ON Tuesday evening, Jan. 27th, Professor Walter Baldwin Spencer, C.M.G., F.R.S., professor of biology in the University of Melbourne, delivered an address on the Life of the Australian Tribesmen before the Royal Anthropological Institute. Previous to his address, which was given in the theatre of the Civil Service Commission, Professor Baldwin Spencer was entertained by the Fellows of the institute at the Café Monico at a dinner, with Professor Arthur Keith, F.R.S., the president, in the chair. The address gave a most interesting outline of the life led by the primitive Australian savage. Professor Baldwin Spencer has intimate knowledge at first hand of the customs and characteristics of the natives of that continent, and his account of their life and surroundings was made more vivid by cinematograph and phonograph records taken by himself on the spot, as well as by lantern slides of the country and its primitive inhabitants. The large audience was first shown views of the plains of the southern part of the northern territory, and of the central ranges and the northern rivers to illustrate the environment of the Australian tribesmen. Then scenes of camp life and corroboree dances, and of the all-important ceremonies connected with totemic worship, were thrown upon the screen, accompanied by phonographic reproductions of the curious barbaric songs sung upon these occasions. By these means Professor Baldwin Spencer was able to bring his hearers into close touch with the domestic and ceremonial life of the indigenous peoples of Australia, whose habits and totemic ritual are of permanent interest to students of anthropology. It is evident that the scientific lecturer of to-day, if he cares to make use of them, has immense advantages over his predecessors.

AMERICAN MEDICAL MEN IN LITERATURE.

IT is both pleasant and profitable to recall the excursions and successes of members of our profession in fields outside of medicine. The ranks of the medical profession down the ages have afforded some notable examples of travellers and explorers, clerics and missionaries, military commanders, legislators and administrators, and in spheres more closely allied to medicine, scientists and litterateurs. "The recent death of Dr. Weir Mitchell suggests," writes a correspondent, "a few notes on some members of the American medical profession who have achieved local, and in some cases more extended, reputation in literature." He mentions merely those members of the medical profession in the western continent who have contributed to literature, including in the term only poetry, fiction and drama, history, biography, and the didactic and philosophic essay, and we take what follows from his communication. James Thacher (1754–1844), who entered the army as assistant surgeon the year before the declaration of independence, was a biographer and historian, and wrote also on demonology and superstitions and antiquarian subjects. Samuel Latham Mitchill (1764–1831), Professor of Chemistry at Columbia College, has a place in the late Clarence Stedman's "Poets of America." Lemuel Hopkins (1780–1801), an eminent consultant of Hartford, Connecticut, was a political satirist and a poet of some mark, his best known poems being "The Hypocrite's Hope," "The Cancer Quack," and "Ethan Allen." Usher Parsons (1788–1881) did some good work in genealogy and biography and history, and wrote on Indian names. He also published a novel, "The Avenger of Blood." Joseph Johnson (1776–1862) left besides essays a work of historical value in "Traditions and Reminiscences of the Revolution." James Gates Percival (1795–1856), Professor of Chemistry at the United States Military Academy, was a poet of mark, his best known works being "Prometheus," "Clio," and "Dreams of a Day." He also published two volumes of verse. Thomas Ward (1807–1873) composed many ballads and war lyrics, as well as comic operas, and certainly has a niche among American poets. Alfred Mercier (1816–1894) was of French descent, and was educated in France. He published in Paris in 1842 two poems, "La Rose de Smyrne" and "L'Ermite de Niagara," which received great praise. He has several novels to his credit, "Le Fou de Palerme," "La Fille du Prêtre," "L'Habitation de St. Ybars," and "Johnelle," the last named having been published in 1891. John Williamson Palmer (1825—1906) abandoned medicine altogether for literature in 1853, and travelled considerably in Europe and the East. He published a comedy, "The Queen's Heart," also "Folk Songs," and "The Poetry of Compliment and Courtship." He is one of the leading lyric poets of America. His poem, "Stonewall Jackson's Way," was written within sound of the battle of Sharpsburg. He anticipated Bret Harte as an interpreter of Californian life in such stories as "The Old Abode," "Mr. Karl Joseph Kraft of the Old Californians," and others.[1] The woman question evidently interested him, for he translated from the French Michelet's "La

[1] The Cyclopædia of American Medical Biography from 1610-1910, by Howard A. Kelly, M.D. London: W. B. Saunders Company. 1912.

Femme" and Legouve's "Histoire Morale des Femmes." His varied travels afforded material for "New and Old; or, California and India" (1859), and "Up and Down the Irrawaddi" (1860). Gustav Bruhl (1826–1903), a native of Prussia, settled in Cincinnati in 1848. Not only as a scientist and historian did he take rank; he was also a German-American poet of no mean order. His "Charlotte," "Die Heidin des Amazon," "Poesien des Urwalds," and "Abendglocken" call for mention. He was also an archæologist and anthropologist of note. Sir William Osler has made us familiar with Elisha Bartlett (1804–1855), whose essay on "The Philosophy of Medicine" is regarded by many as a classic in American medical literature, as is also his discourse on the "Times, Character, and Writings of Hippocrates." Orpheus Everts (1826–1903) was one of the early "problem novel" writers. His "Giles and Company" dealt with the problem of heredity, while "The Cliffords" was based on the relations of religion and science. He also published a volume of verse entitled "Facts and Fancies." Chandler Robbins Gilman (1802–1866) wrote "Life on the Lakes" and "Legends of a Log Cabin." We have not included Drummond, the poet of the Canadian habitant, for he was a Canadian, or Draper, the historian and philosopher, or Noah Webster, the lexicographer, historian, and essayist, or Oliver Wendell Holmes, who needs no introduction where the English language is read.

AN EPIDEMIC OF "SHIP FEVER."

THE old "ship fever," typhus, has of late years been little heard of, but if the former conditions of dirt and overcrowding arise again the disease will come back with them. All port medical officers must therefore have typhus fever in their minds, and will be obliged to Dr. Markl, health officer of the port of Trieste, for his account[1] of an epidemic which, arising in a crowded Turkish transport, came under his observation last summer. On May 14th the steamer *Vorwaerts* embarked at Valona, in Albania, and at another port on the Adriatic, 2766 defeated Turkish troops, worn out and in misery. There were two doctors belonging to the ship and six Turkish doctors as well. 200 of the troops were sick, but their ailments were not exactly diagnosed, and though 27 died during the passage free pratique was at once granted the ship on her arrival at Constantinople on May 20th (sixth day). It was subsequently ascertained that while the soldiers were on board the crew had lived practically with them and all of them had become in consequence infested with lice. As soon as the troops were landed the ship returned to Trieste (May 25th, eleventh day), and there disembarked her trooping fittings and discharged half her crew before proceeding, on May 29th (fifteenth day), to Fiume, which she reached next day, when eight of the crew reported themselves sick and were diagnosed as suffering from malaria or three-day (pappataci) fever. On June 1st (eighteenth day) she was back again at Trieste with 14 sick on board, supposed by the visiting physician to be cases of some form of alimentary intoxication, and pratique was granted, when two of the sick landed and went to their homes. But when request was made for the admission of one of the crew to the city infectious hospital it was recalled that another of the men discharged from that ship on or about May 25th had been already taken ill with typhus fever, so the grant of free pratique was recalled and the ship isolated for the night in the roads. Next day (nineteenth day) she was again medically examined and 18 men on board were found to be sick, all, as it proved, with typhus fever. On later investigation it appeared that in each half of the crew, those discharged on May 25th and those still left on board, 20 cases developed, 40 in all, and that no case arose among those men who replaced the half first discharged—that is, the disease attacked those only who were on the ship with the Turkish troops, but did not spread from them to the men who came on board later. The symptoms were two or three days' feeling of illness, shivering, headache, and anorexia; one man had vomited; only four of the 18 were in bed, but all had more or less pyrexia and fast pulse, two had enlarged spleens, and four showed an exanthem (nineteenth day). On none were any lice found, the men having had time since May 20th to get rid of them. From not one single case, even from those nursed at their own homes, did infection spread—a strong corroboration, as Dr. Markl points out, to Nicolle's view that the infection of typhus fever is carried by lice, and that a patient may be harmless to his neighbours once he is freed from lice. It is noted how strikingly little subjective discomfort and feeling of illness there is at first, but the patients all complained of distressing sleeplessness and of bad dreams when they did doze. The exanthem is an inconspicuous roseola appearing on the fourth or fifth day, and first on the front of the chest and abdomen, becoming generalised later, and altering to petechiæ. Post mortem it is noticed at once that the blood is fluid, as is sometimes the case after death from suffocation; ecchymoses are seen on the surface of the liver and spleen, and the spleen is enlarged, weighing over ¾ lb. Death occurred in six of the cases described above (15 per cent.) from collapse, and in the majority of instances at the end of the second week. Injection of blood into guinea-pigs never set up the disease.

[1] Archiv für Schiffs- und Tropen- Hygiene, December 1913, p. 805.

THE SIMPLES AND DRUGS OF INDIA.

FOR some 80 years—namely, from 1498 to 1580—the only European power holding any dominion in India was Portugal. Vasco da Gama anchored before Calicut in May, 1498; Francis of Almeida was the first Viceroy, from 1505 to 1509; while Goa was captured in 1510 by Alfonso de Albuquerque, the Portuguese domination being extended to various places on the Malabar and Malacca coasts. Goa became, as it still is, the capital of Portuguese India, and to Goa, in 1534, there came as physician to Martin Affonso de Sousa, afterwards (1542 to 1545) governor of the city, Garcia da Orta, author of a work written in dialogue form upon the Simples and Drugs of India.[1] The book was first printed at Goa by Johannes de Endem in 1563, being the third book ever printed in India. A Latin epitome made by Clusius (Charles de l'Escluze) was published by Plantin in 1567, which, says Sir Clements Markham, was very different from the original. The epitome was translated into Italian by Antonio Briganti (Venice, 1582) and into French by Antoine Colin (Lyons,

[1] Colloquies on the Simples and Drugs of India, by Garcia da Orta. New edition (Lisbon, 1895), edited and annotated by the Conde de Ficalho. Translated with an introduction and index by Sir Clements Markham, K.C.B., F.R.S. London: Henry Sotheran. 1913. Pp. 509. Price £2 2s. net.

1619), Orta's name being translated into Du Jardin. An inaccurate edition was published at Lisbon in 1872, and finally Count Ficalho published his standard edition in two volumes, 1891 to 1895, with valuable notes and comments, he himself being an accomplished botanist. The volume now before us is a translation of this edition. Garcia da Orta was born at Elvas about 1490, and from the evidence of the Colloquies is supposed to have studied medicine at the Universities of Salamanca and Alcala de Henares from 1515 to 1525. He then returned to Portugal and practised as a village doctor at Castello de Vide. In 1532 his patrons, the Sousa family, got him appointed lecturer in Lisbon University, a post which he held until 1534, when, as already mentioned, he accompanied Martin Affonso de Sousa to Goa. Here he practised as a physician until about 1570, when he died. The interlocutors of the Colloquies are Garcia da Orta and an imaginary person, by name Dr. Ruano, who is, says Count Ficalho, the personification of the literary and student side of Orta himself. Ruano is always referring to Pliny, Dioscorides, Serapion, Mesue, Avicenna, and other ancient authors, while Orta, though he occasionally mentions the ancients, says (p. 288), "I keep myself remote from these scholastic matters," and frequently when Ruano quotes the ancients in opposition to Orta the latter simply replies, "I have seen it." The Colloquies are 59 in number, and deal mostly with vegetable drugs, though some animal drugs, such as ambergris, bezoar, and theriaca, are dealt with. There is also a Colloquy on precious stones and on pearls, which formed part of the *Electarium de gemmis* or Diamargariton of mediæval and later times. So Gilles de Corbeil in his directions for treating a rich patient says: "Contundat gemmas, molat aurum, misceat ambram." One Colloquy treats of cholera, another gives an account of a robbery committed by the aid of datura poisoning, and another of the Pao de Cobra, one of the many "Snake Roots," scientifically known as Pauwolfia Serpentina. Orta's style is occasionally somewhat confused. For instance, in talking of plants used for scent he says (p. 37): "Others are used for their scent, such as sandal wood, which is very commonly used to anoint the body, and the Linaloe, Amber, Almisque, and Algalia, much used because the price is not so high. This is because there are many cats in many parts of India." The argument appears a decided *non sequitur*—it may be one analogous to Darwin's well-known canon about cats and clover. The book on the whole is singularly interesting as giving a vivid picture of a physician's knowledge of Indian drugs in the sixteenth century. It is illustrated with pictures of various plants taken from the work of Cristoval Acosta, brother of the better known Josef Acosta, who wrote on Mexico. Cristoval published a work on the medicines of the East Indies at Burgos in 1578. The volume is beautifully printed, though we notice, surely, a misprint on p. 13, where the word "Greeks" in Ruano's first question should be "Turks." Again, on p. 28, in the Colloquy on *Amomum*—i.e., cardamum—Ruano quotes Mateolo Senense as saying that he "does not hold for certain that this drug enters into the *tiriaca* of Andronicus." In his index of persons Sir Clements Markham gives the name Andronicus (p. 28) and adds, "apparently a mistake for Marcus Aurelius." In our opinion there is no doubt that "Andronicus" is a mistake for "Andromachus." The Andromachi, father and son, were physicians to the Emperor Nero, and the father wrote a poem in Greek elegiacs, Ἀντίδοτοι γαλήνῃ, which was quoted by Galen in the Liber de Theriaca ad Pisonem and was translated into Latin under the title De Theriaca. There were many Theriacæ in ancient medicine, but the most renowned were those of Andromachus and Damocrates.

"THE ISLE OF MAN."

Dr. Gustave Monod, M.R.C.S., M.R.C.P., the first Frenchman for 300 years to receive this combination of qualifications, has been studying post-graduate methods in England as a Government delegate, and on Jan. 22nd gave a demonstration in the Therapeutics Section of the Royal Society of Medicine of the "Peristaltic Movements of the Intestines of a Cat," thus showing his audience by the help of the cinema how vividly some physiological processes, not usually visible to the mind's eye, may be set before the student. Food passes from the stomach to the bowel of a cat more rapidly than through a dog or a human being, but when under the influence of senna, and in the conditions of a laboratory experiment, the feline gut performs with almost surprising *aplomb*. Thrown artistically upon a dark-blue screen the cat's intestines, in the film from the Institut Marey shown by Dr. Monod, appeared a coil or tangle of glistening folds, which suggested a cobra di capella or a silkworm, according as the successive peristaltic movements distended or convulsed their convolutions. A futurist sculptor of the school of Mr. Epstein might have seen in the abbreviated drama of the descent of fæcal matter a subject quite as interesting as pregnancy or parturition, which the new art believes to be not unworthy of plastic representation. In the same drama an old Greek physician might have fancied that he beheld the writhings of the mystic serpent of healing. Indeed, one wonders whether the caduceus does not in some sort symbolise man's twining guts. Had it been possible, however, for old Phineas Fletcher to be present at the lecture he would have been more delighted than any of the audience. Fletcher is the poet of the Microcosm, and in "The Purple Island or the Isle of Man," published at Cambridge in 1633, he essays the bold task of describing man's inner economy, both anatomical and physiological. Following up a metaphor well known to Shakespeare and to the ancients, he portrays the body as a country with rivers, lakes, cities, and so forth, and a host of functionaries from the Steward Gustus down to the Porter. The stomach is the kitchen and the intestines are its drainage. His metaphor here is scarcely metaphorical enough. Some eight verses at the end of Canto II. describe the drainage system, over which Hepar, a great official, keeps spies:—

> These pipes are seven-fold longer than the Isle,
> Yet all are folded in a little pile,
> Whereof three noble are, and thinne; three thick, and vile.

The poem is not a success, for it fails to move us. Indeed, it is at best a "conceit" of a most ingenious kind. Poets are apt to be conventional in their thought, and they probably imagine that there is something shameful or terrifying in what happens inside us. Now, however, that there is a medical poet laureate someone may think of the possibilities of a poetry of medicine. Much verse has undoubtedly been written on specific diseases,

such, for instance, as the famous "syphilis" epic. But the body in health has been left severely alone. Only one poem has come to our notice in recent years which in any way recalls "The Isle of Man." This is "The Unexplored Republic," which appeared in the *Speaker* shortly before the decease of that admirable literary weekly. The writer conceives of the brain as an unexplored country, governed in some mysterious way by a general consensus of individual cells. Pathos enters into such a theme when death is discussed and the decay of protoplasm considered.

Shall I then know when breeze and stream grow dumb,
And the bright frontier watchfires cease to shine,
And all my tiny citizens become
Doomed miners in a mine?

Shall I be given, or can they, dying, give
The sum of their small lives to be my spark,
So that my selfish spirit still shall live
When their small sprites grow dark?

How is Man's Immortality contrived?
How, if each live cell die, can I attain
Unto th' Immortal who am myriad-lived,
Of living cells a chain?

O darkling "Purple Island," still unknown!
O unexplored Republic, hard to span!
O complex Self unutterably alone,
O lone unfathomed Man!

FRACTURE DISLOCATION OF CERVICAL VERTEBRÆ WITHOUT INJURY OF THE CORD.

BEFORE the advent of skiagraphy little was known of fractures of the spine unaccompanied by lesions of the cord, for the reason that such could not be diagnosed. Now it is known that they frequently occur. Fracture dislocation of the cervical spine is usually accompanied by severe injury of the cord. In the *Australian Medical Journal* of Dec. 6th, 1913, Mr. Alan Newton has reported the following case exceptional to this rule. A man, aged 26 years, while cycling collided with a horse and cart. The horse's nose struck him on the back of the head, throwing him to the ground. He did not lose consciousness and at once regained his feet. He then felt severe pain in the upper part of the neck, most marked posteriorly and increased by even slight movement. On examination he was found to be muscular and well-nourished. The head was held immobile with the cervical spine in a position of slight extension. There was moderate tenderness over the spines of the second and third cervical vertebræ, but no deformity was noticed. Careful examination of the nervous system revealed nothing abnormal. A skiagram showed an injury much more considerable than was expected. There was fracture dislocation between the second and third cervical vertebræ. The pedicles of the second were fractured, and the body (in accordance with rule) projected forwards. However, the spinal canal was not encroached on, and to this fact the patient owed his life. The projecting body could be palpated through the pharyngeal wall. The treatment was immediate immobilisation of the neck by means of a plaster jacket extending from the vertex of the skull to the waist and rest in bed for two months. The jacket was then removed. Three months after the injury there was no pain or apparent limitation of the movements of the spine. A second case occurred in the practice of Mr. Fred Bird. A man, aged 25 years, while building a haystack, fell from the top to the ground, a distance of 12 feet. His brother ran to his assistance and found his head tilted forwards and to one side and held rigidly in that position. Thinking the patient was in danger of imminent death he seized his head and steadying it between his knees gave it a sudden twist. He heard a distinct click and at once the patient could move his head again. Some weeks later Mr. Bird saw him for neuralgic pains in the back of the neck and head in the course of the great occipital nerve. A skiagram showed a partial dislocation of the atlas on the axis and some crushing of the arch of the latter. After a year he had improved, but had not completely recovered. He occasionally suffered from pain and there was slight limitation of movement of the neck. The pain was no doubt due to pressure of callus upon the nerve.

PELLAGRA INVESTIGATION.

NOTWITHSTANDING the numerous researches which have been carried out in recent times concerning the etiology of pellagra, the real origin of that disease remains shrouded in mystery. We are not, however, without hope that before long some satisfactory solution of the problem may be forthcoming as our knowledge of the subject accumulates. Other diseases have seemed equally obscure, and for long years have puzzled investigators. Two instances which may be cited are beri-beri and endemic goitre, in both of which a satisfactory explanation of their causation has at last been found. There has been no lack of hypotheses advanced to explain the occurrence of pellagra in certain places, but so far none of those put forward have been supported by a sufficient weight of evidence to render them acceptable to scientific minds. Neither maize (spoilt or unspoilt), parasitic infection, nor a deficiency of some essential element in the dietary has yet been proved to be the true cause of pellagra, and until the causation of this mysterious malady is definitely known it is impossible to formulate the most appropriate measures for preventing it. For this reason any contribution to the general stock of knowledge respecting this disease must be heartily welcome at the present time. Among those who have taken a conspicuous part in this country in the investigation of pellagra Dr. L. W. Sambon comes in the first rank. It may be remembered that in 1912 he visited Italy and other parts of Southern Europe, on behalf of the British Pellagra Commission, to study the disease in some of its definitely recognised endemic areas, and to consider the conditions there in the light of his own hypothesis that pellagra was due to a parasitic infection transmitted to man through the agency of some insect, probably a species of simulium or sand-fly. In continuation of these studies Dr. Sambon left England in August, 1913, on an expedition to the United States to inquire into the circumstances under which pellagra occurred in certain areas situated in the Southern States. By invitation he attended the American Pellagra Conference held in October at Columbia, South Carolina, taking part in the discussions and comparing notes with other experts. It appears that he found a number of American medical men disposed to believe in the parasitic theory of the origin of the disease, and able from their own experiences to find evidence which seemed to support it. He also examined the work that was being done by the Thompson-MacFadden Pellagra Commission in South Carolina and was much impressed with it. After leaving

the United States he visited the Panama Canal Zone, British Guiana, and by request a number of our West Indian Islands, in some of which he discovered undoubted evidence of the presence of pellagra in localities where it had not been previously suspected to exist. Besides studying that disease Dr. Sambon took the opportunity incidentally of gathering information concerning some other tropical maladies, including blackwater fever, filariasis, elephantiasis, and leprosy. We now learn that he has recently returned to London, bringing with him a large amount of valuable material collected during his trip to the Western hemisphere. This information will, we understand, be embodied in a printed report which is expected to form an important contribution to the etiology and epidemiology of pellagra; its publication will be awaited with considerable interest by the medical profession of this country. It is right to mention here that it was due to the generosity and public spirit of Mr. H. S. Wellcome that the expedition of Dr. Sambon in 1913 to America became possible from the financial point of view, and the same remark applies equally to the expedition undertaken by Dr. Sambon to Southern Europe in 1912.

THE NATURAL PRESENCE OF BORIC ACID IN FOODS.

PURVEYORS of preserved provisions, or even of fresh products which easily spoil, such as butter and milk, make considerable use of various antiseptics. A certain number of these which have been found to be injurious to the public health are forbidden by the sanitary regulations of nearly all countries. When the toxicity is weak, but may yet appear cumulatively on daily use of the product, even though it be used in minimum quantity, the percentage allowed is fixed by regulation. This is the case with sulphurous acid in wines, salicylic acid in beer and jams, and boric acid in provisions. When such a substance is examined by the police authorities in France and discloses a proportion of the antiseptic greater than the permitted strength a prosecution ensues, and in the case of an imported product its admission is refused. Two years ago the fruit crop was poor in France, and a large quantity of dried fruit and preserves was imported from Canada. Analysis showed a too great quantity of boric acid, and admission was refused by the Customs. The Canadian merchants protested that they had not added more boric acid than the regulations allowed, and an inquiry was held, the investigation being entrusted to Professor Gabriel Bertrand of the Institute Pasteur. Dr. Roux has recently reported the results of this investigation to the Académie de Médecine. It was shown that boron is found in all living cells. By means of a very precise quantitative analytical procedure, devised by M. Bertrand and M. Aiguilhon, it is possible in a few hours to determine the exact amount of boron contained in the natural product and to distinguish it from the boric acid artificially introduced. M. Bertrand thus found in each kilogramme of dried fruits 0·112 gramme of boric acid in the pulp of the apricot and in cherries, 0·028 gramme in the black grape, 0·0028 gramme in English pears. Nearly all vegetables—notably haricots, carrots, turnips, onions, gherkins—contain per kilogramme from 110 to 112 milligrammes. These findings will be most likely made the most of by food purveyors; but they will at least permit the establishment of a normal boric acid content, beyond which the discovery of any greater amount will justify a conclusion of adulteration. For boric acid to exercise adequate preservative properties it will have to be used in proportions greater than those shown by analysis to be present in the natural product. This case recalls the announcement made in our columns 11 years ago that salicylic acid would appear to be a normal constituent of most fruits, the quantity found, however, being very small and not exceeding one milligramme per kilogramme of fruit.

THE ACTION OF SODIUM BICARBONATE IN SHOCK.

IN the *American Journal of the Medical Sciences* Dr. M. G. Seelig, professor of surgery, St. Louis University, Mr. J. Tierney, and Mr. F. Rodenbaugh have published an important experimental study on the action of sodium bicarbonate in shock. In 1903 Howell found that sodium carbonate was an excellent cardiac stimulant in shock. In 1910 Henderson suggested, as a corollary to his theory that shock is due to loss of carbonic acid (acapnia), the prevention of such loss and its replacement by increasing the dead space of the respiratory tract. In the treatment of shock Howell obtained better results from sodium carbonate than from substances generally regarded as of value in this condition. Adrenalin, pituitrin, alcohol, and strychnine gave negative results, or at best temporary and unimportant rises of blood pressure. He thought that the pressor effect of sodium bicarbonate was due to its alkalinity. In order to check Henderson's theory of shock Professor Seelig and his collaborators introduced a solution of sodium bicarbonate into the blood, from which carbonic acid is set free by the action of three constituents—hæmoglobin, serum albumin, and acid sodium phosphate. Infusion of sodium bicarbonate caused a pronounced rise of blood pressure in dogs in a state of shock induced by manipulation and chilling of the abdominal viscera. A rise of 18 millimetres in the mercury manometer was the average, but a rise of 40 millimetres was not uncommon. Concomitantly with the rise of blood pressure there was an increase of the amplitude of the heart beats. This increase, as well as the rise in blood pressure, was well maintained for a fairly long period. On the other hand, the sodium bicarbonate appeared to have no effect on the rate of the heart beat. Another effect was an increase in the depth of the respiration. Evidently this was due to the action on the respiratory centre of the increased amount of carbonic acid in the blood, for an identical result was produced by injection of carbonic acid into the blood. But the rise of blood pressure was not to be explained by the same cause; in other words, by the acapnia theory of shock. For if this theory were correct the increased depth of respiration produced ought to have deepened the shock. The rise might be attributed to (1) the bulk of fluid injected; (2) hypertonicity of the injected fluid; (3) alkalinity of the injected fluid; and (4) influence of free carbon dioxide. The bulk of fluid would not explain the rise, because the amount used was small—in all cases under 26 c.c. and sometimes as low as 2 to 5 c.c. With regard to the second theory, it has been shown that in shock plasma escapes from the blood into the tissues and the

specific gravity of the blood rises. It is possible that the introduction of a hypertonic solution into the blood might reverse the current and prevent the specific gravity of the blood from rising. That the rise of pressure was not due to this cause was shown by infusing dogs in a state of shock with hypertonic salt and basic sodium phosphate solutions. Practically no effect was produced on the low blood pressure. That alkalinity was not the cause of the rise was shown by infusing potassium hydrate and basic sodium phosphate solutions, which gave no rise. Finally, carbon dioxide gas was introduced into the femoral vein. It stimulated respiration most actively, but did not influence the amplitude of the pulse or the blood pressure. This seems to disprove Henderson's view that shock is due to acapnia. The direct vasomotor effect of sodium bicarbonate on the vessels was not tested, but Howell in working on sodium carbonate formed the impression that it acted solely as a cardiac stimulant. All other factors being excluded, it followed that sodium bicarbonate acted specifically on the heart muscle. This was corroborated by the fact that when both vagi were cut a rise of blood pressure followed its injection.

ST. GEORGE'S HOSPITAL.

WE have learned with regret that the Princess Christian has resigned the presidency of St. George's Hospital. A meeting of the house committee of the hospital took place on Wednesday last to consider Her Royal Highness's resignation, when the circumstances precedent, which are well known to all our readers from the full and frequent allusions in the press, came under discussion. The house committee passed a resolution universally regretting Princess Christian's decision, begging Her Royal Highness to reconsider it, and requesting that she would receive a deputation from them that their views might be laid before her. We understand that the existing house committee, any vacancies thereon being filled up, will remain in office until June; but a special court of governors will be held on Wednesday, Feb. 12th, when the proceedings will be open to the press.

Sir Richard Douglas Powell, Bart., M.D., will deliver two Emeritus Lectures on Fridays, Feb. 20th and 27th, at 3 P.M., in the large theatre in the Middlesex Hospital Medical School, "On the Therapeutic Use of Digitalis and Strychnia."

Sir StClair Thomson and Mr. Arthur Cheatle have been elected honorary members of the Società Italiana di Laringologia e Otologia, and Sir StClair Thomson has been elected an honorary member of the Berlin Laryngologische Gesellschaft.

WITH reference to the decision of the London County Council that it could not legally accept the ambulance service scheme prepared by the Metropolitan Asylums Board at the request of the Council, it was mentioned by the ambulance committee of the Board on Jan. 24th that when in 1903 the Board began the conveyance of non-infectious cases (mental, medical, and surgical) the service could have been easily extended to street accident cases. These, however, were purposely excluded because the County Council, in 1902, had undertaken an inquiry into the ambulance question. Eleven years had passed since then and it was to be regretted that London must now wait for a further indefinite period for a street accident service, which the Asylums Board was prepared to provide by midsummer, 1914. Although the County Council has now held two meetings since Christmas, there are no details of an ambulance scheme, promised to be reported immediately after the recess.

THE EXPERIENCES OF CAPTAIN SCOTT'S NORTHERN PARTY FROM A MEDICAL POINT OF VIEW.

THE large hall of the Royal Society of Medicine was completely filled on Monday afternoon, Jan. 26th, for an interesting lecture by Surgeon G. Murray Levick, R.N., Sir FRANCIS H. CHAMPNEYS, President of the Society, being in the chair.

Surgeon LEVICK said it had been suggested to him that as Captain Scott's northern party lived for some time under unusual conditions their experiences might interest the Fellows of the Society. There were six members of the party: Commander Campbell (in command), Surgeon Levick, Mr. Priestley, and three petty officers of the Royal Navy, who left New Zealand at the end of November. When they landed at Cape Adair they built their sectional hut. He did not believe there were stronger winds anywhere. A speed of 100 miles an hour was several times recorded before the wind-gauge was broken. The party had to crawl on all fours. The hut was anchored by wire hawsers to stakes in the ice, and a wind screen was erected sloping upwards to the roof of the hut. The rough seas threw up huge boulders, which subsequently froze together and formed large masses. In a couple of days the sea froze to a depth of 18 inches, sufficient for a sledging party to travel over. There were four months of darkness, during which they were unable to get away from the beach.

The clothing for the spring—which was the time of lowest temperature and strongest winds—consisted of thick woollen trousers and vest, a woollen jersey, and cotton windproof clothing; two or three pairs of socks, fur boots of reindeer hide, and a windproof helmet. A woollen nose-piece was also necessary. The weather was very treacherous. One might set out on a fine and promising day and in 20 minutes there would be a tremendous blizzard without warning, preventing one seeing a couple of yards in front. The party found some interesting fossil remains, one of which showed a tropical tree. When it became evident that the ship could not reach them they had only three weeks' full provisions left. The base at Cape Evans was 220 miles distant. They secured a number of old penguins, and though they were thin and had no blubber they formed an agreeable change from seal meat. Owing to the strong flavour of the seal blubber it was difficult to get used to, and the party had very little oil. At first they ate as much seal meat as possible, with resulting unpleasant symptoms. Until the end of July the party were on short rations and were perpetually hungry. They gradually introduced blubber 60 per cent. to 40 per cent. of meat Carbohydrates were missed very greatly. During seven months very little exercise was taken. Frost-bites were always a result of going into the open.

When the supply of salt became nearly exhausted resort was had to salt-water ice. But this initiated a distressing epidemic of diarrhœa, and was discontinued for a week, and the remaining salt used, when the diarrhœa ceased, only to recur when the ice was resumed. In all respects except food, the party suffered all the conditions associated with the production of scurvy, but none had that disease. It seemed impossible to have scurvy while fresh meat was being eaten. While large quantities of seal meat were being taken, there was much uric acid in the urine, and the crystals made micturition distinctly painful. Several members suffered from enuresis in their sleeping bags, with serious results, the bags on awaking being found frozen hard. The desire to micturate became very acute and precipitate, quite out of proportion to the reason for it. These symptoms largely subsided on a low diet. Later every member suffered much from constipation, anal fissures, and hæmorrhages. A man would be absent for 40 minutes, and return in much pain, remaining in pain for hours. When they succeeded in securing more seals the resumption of hearty meals brought back the uric acid and other discomforts. They therefore boiled the meat for at least half an hour, and this caused a disappearance of the symptoms. If the meat was underdone or there were not facilities for cooking, the symptoms became once more evident.

The ventilation of the "igloo," or ice-cave, is an interesting question. To keep out the wind two doors, consisting of bags and boxes, practically shut out all air, and though six men slept in this confined space, $12' \times 5' \times 4'\ 6''$, no discomfort was felt, not even a headache. But a severe blizzard, combined with the glazing of the roof of the cave, due to the refreezing of the partially melted snow, prevented the permeation of oxygen through the drift snow into the igloo, and the lamp, the stove, and the match all refused to burn. This necessitated the making of a chimney through the drift snow. Surgeon Levick attributed the absence of asphyxial symptoms to the stimulant effect of the intense cold, but for which such foul air could never have been tolerated. Five months were passed in comparative health in these conditions, but as they felt they were going downhill the remaining two months, they decided to get away; and to fit themselves for the long sledge journey to the base they did Swedish exercises. By the time the journey was commenced they were fitter than they expected to be. He believed it was only the carnivorous diet which enabled them to pull through. After three days, during which they went very well, they began to weaken, but fortunately they found the depôt with many varieties of food left by Mr. Griffith Taylor's geological party. They all made an enormous meal, eating the frozen butter and lard like apples. Yet they woke up again in the middle of the night as hungry as ever, and partook of another heavy meal. A member of the party who had been ailing for weeks became quite well within 24 hours of his hearty meal, and finished up quite strong; the varied and plentiful diet had done more for him than all the remedies Surgeon Levick was able to administer. During several days they did 16 hours' marches each day, with only short intervals for food. The long journey home occupied five weeks.

The PRESIDENT conveyed to the lecturer, in the name of the audience, hearty thanks for his lecture.

MEDICINE AND THE LAW.

Dr. Arthur Drury v. *Officers of the National Antivaccination League.*

Dr. Arthur Drury, of Halifax, has recently agreed to the settlement of an action entered in the High Courts of Justice, King's Bench Division, against certain officers of the National Antivaccination League. The action is a sequel to a Government inquiry held by the Manx Legislative Council last year, at which Dr. Drury gave evidence in favour of vaccination. The *Vaccination Inquirer*, in July last, contained an article on Dr. Drury's evidence, which formed the subject of the action. In October the following article, headed "Dr. Drury and the *Vaccination Inquirer*," appeared in that paper:—

> Having regard to the freedom of the language frequently used by both pro- and anti-vaccinist controversialists, we are surprised to learn that Dr. Drury considers the remarks which we made in the July *Inquirer* on certain portions of his Manx evidence transgress the limits of "fair comment." We therefore wish to state that in using the words "dishonest" and "dishonourable," we had no desire or intention to make any personal imputations against Dr. Drury as a professional man. The context of those words clearly shows that they had reference only to the criticism of certain statements which Dr. Drury had made in regard to the *Vaccination Inquirer*, and that they were used in a controversial and not in a personal sense. As, however, Dr. Drury thinks that they are capable of an offensive interpretation, and that they reflect upon his character as a professional man, we readily insert this explanation, and express our regret if the use of these words has given Dr. Drury cause to complain.

This was regarded as wholly insufficient, and in December the defendants caused to be printed and published in the *Vaccination Inquirer* the following further apology:—

> We are sorry to learn that Dr. Drury is not satisfied with the explanation and expression of regret which we published in our issue of Oct. 1st, 1913, and we therefore desire to amplify our apology. We definitely and distinctly withdraw all the words in our article of July 1st which can be considered in any way to reflect on Dr. Drury either in his professional or personal capacity. We desire to express our regret that we allowed any words to be published which could cause Dr. Drury any pain or be considered in any way to reflect upon his integrity, and we make an unreserved and unconditional apology for having done this. Owing to the correspondence that has taken place with Dr. Drury's solicitors, we were not able to insert the above apology in our November issue.

Later a settlement has been agreed upon on the following terms: 1. The payment to Dr. Drury of the sum of 100 guineas. 2. An undertaking that the publication shall not be republished. (The defendants state that the publication has already been withdrawn.) 3. The payment of costs in full. 4. The publication in the *Vaccination Inquirer* of the following:—

> Dr. Drury having taken exception to a certain article in the *Vaccination Inquirer*, an action was commenced in the High Court at his suit against the editor of the *Vaccination Inquirer* and certain officers of the National Antivaccination League. This action has now been settled by the apology and withdrawal which appeared in the *Vaccination Inquirer* of 1st December, 1913, defendants having paid to Dr. Drury 100 guineas as agreed damages and his costs of the action, and the issue containing the statements complained of has been withdrawn from publication.

5. An agreement that the terms of settlement may be published in the *Jennerian*, the *British Medical Journal*, and THE LANCET. Dr. Drury's case has been conducted by Messrs. Hempson, solicitors

(London), acting on behalf of the Medical Defence Union. We congratulate them on the result of their prompt and energetic action.

The Spreading of Scarlet Fever.

At the West London Police Court Mr. C. E. A. MacLeod was summoned for failing to notify a case of scarlet fever, and Mr. A. Samson, the employer of the patient, a domestic servant, for causing her to be placed in a public conveyance, a taxicab. After a son of Mr. Samson, who lives in Kensington, had suffered from scarlet fever and his room had been disinfected, a nurse in the defendant's service contracted the disease. Mr. MacLeod saw her and pronounced her to be suffering as stated, whereupon Mr. Samson sent her in a taxicab to her home at East Dulwich, to be there attended by her panel doctor. This gentleman ordered her removal to an isolation hospital and notified the case, but no notification was made by Mr. MacLeod. Mr. MacLeod, in giving evidence in his own defence, said that it never occurred to him to notify the case—the girl was not his patient; he was only asked to examine her, and he knew nothing about her being sent home in a taxicab. Mr. Fordham accepted this statement, but at the same time inflicted a fine of £1 with 23*s.* costs. The law allowed no alternative, but our readers will sympathise with Mr. MacLeod; he clearly did not see that the matter concerned him. Mr. Fordham commented severely upon the conduct of Mr. Samson towards both the public and the patient, fining him £5 with 3 guineas costs. It will be observed that there was no reason in this case why a medical practitioner upon the panel should not have attended the patient at her temporary address. But the spread of education has not yet made the public fear the spread of disease. In another recent case, also of scarlet fever, a young man was fined £1 for exposing himself when suffering from scarlet fever in a public-house at Hednesford, where he lived. This conviction was due to the public spirit and energy of the defendant's medical attendant, Dr. R. S. Harvey, who, not finding him at home in bed, followed him to the public-house, and upon his escaping thence pursued him on a bicycle till he finally caught him hiding behind a building.

Chilley v. *Bradford.*

An action was tried recently by Mr. Justice Darling and a special jury in which Mr. Victor Chilley sued Dr. A. Bradford as proprietor of a nursing home, in which the plaintiff had undergone an operation, for damages for the negligence of his servants. The plaintiff's case was to the effect that in order to have an operation performed upon his nose by Mr. C. A. B. Horsford he entered the defendant's nursing home about 2.30 P.M. and went to bed. A nurse named Stuart soon afterwards placed a hot water bottle in his bed and afterwards administered to him an injection of morphia. He went to the operating theatre about 5.30 feeling no pain in his legs or feet, returned to his bed, and went to sleep after the operation, which was successfully performed. When he woke up he found his legs and feet blistered from severe burns, apparently due to the hot-water bottle placed in the bed by the nurse. Evidence as to the duration of the heat in hot-water bottles placed in a bed was given with regard to this, and the fact that in the way indicated the plaintiff had been caused suffering was not seriously in dispute, the main question being the legal liability of the defendant for the negligence, if any, of a nurse in his employment in the circumstances in which the nurses of a nursing home are placed at the disposal of patients and of their own medical advisers. The defendant's case was that it was his duty not to nurse the plaintiff, but to provide competent nurses to do so under the direction of the plaintiff's medical adviser. In the end the following questions were left to the jury by Mr. Justice Darling: 1. Did Dr. Bradford undertake to nurse the plaintiff? 2. Was Nurse Stuart a qualified and competent nurse? 3. Was Nurse Stuart guilty of any negligence by which the plaintiff was hurt. 4. Was Dr. Bradford himself guilty of negligence and, if so, in what respect? 5. In ministering to the plaintiff was Nurse Stuart acting as the servant of Dr. Bradford? 6. What damages, if any, should the plaintiff receive? The jury answered questions 1, 2, 3, and 5 in the affirmative, 4 in the negative, and as to 6 awarded £100 damages to the plaintiff, for which judgment was entered. The above questions are quoted at length because it is from the points thus left to a jury that the nature of the liability and of the facts and conditions upon which a claim for damages must be based can best be gathered. Messrs. Le Brasseur and Oakley, instructed by the London and Counties Medical Protection Society, Limited, defended the action on behalf of Dr. Bradford.

Misconception of a Hospital's Functions.

At Stroud county court a dentist's assistant was sued for £17 by a medical man who had operated on the defendant's wife in the hospital. The defendant, who earned 2 guineas a week, said that he thought all attendance in hospitals maintained by voluntary subscriptions was free. His honour Judge Ellicott said that hospitals were maintained as charities to assist the extremely poor, and not for the benefit of those earning as much as £2 a week. He gave judgment for the plaintiff for the amount claimed. It cannot be pointed out too clearly that an understanding as to payment should be arrived at beforehand between medical man and patient in all cases where any misunderstanding as to liability is possible.

The Hopf Trial.

As already announced in THE LANCET of May 24th, 1913, p. 1495, a man in Frankfort had been arrested on suspicion of having killed his wife by inoculation with pathogenic bacteria and the internal administration of arsenic. During the investigation it appeared probable that he had on former occasions murdered other members of his family in the same way, and he had to appear recently before a criminal court in Frankfort charged with the murder of his father and his mother, two of his children and his first wife, and also with the attempted murder of his second wife and his third wife, the latter being now the only survivor of them all. His motive for doing so was that he wished to get the money for which the lives of his wives and children were insured and the inheritance of his parents. He had the body of one of his three wives cremated so that the cause of her death could not now be ascertained, but in the bodies of the children and of his first wife quantities of arsenic were found. The prisoner admitted that he had given arsenic to some of his family during their lifetime, not for criminal, but for therapeutic purposes, and also after death in order to prevent the body from decomposing. He denied having inoculated his wives with pathogenic bacteria, but stated that he

had used such bacteria for experiments on dogs in connexion with his private studies, although he was neither a bacteriologist nor a medical man. The mental attitude of the man was extremely peculiar. He was absolutely calm and gave his answers without the least excitement. The bacterial cultures were purchased by him in Vienna because no German laboratory was willing to supply the cultures ordered by him under the name of an alleged scientific institution. After a trial lasting three days the jury found him guilty of the murder of his first wife, of the attempted murder of his second and third wives and of his two children, and not guilty of the murder of his parents. Medical experts declared that the man was not insane, but was in the full possession of his mental faculties. It is reported that the Austrian authorities will adopt legislative measures such as already exist in Germany to prevent pathogenic micro-organisms from being supplied to unauthorised persons.

THE ANNUAL REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD FOR 1912-13.

I.

THIS report[1] forms a separate supplement to the forty-second annual report of the Local Government Board. Following the customary arrangement the volume begins with the report proper, in which the medical officer of the Board describes some of the outstanding features characterising the public health during the year, the principal matters which have been undertaken by the medical staff of the department, and the "auxiliary scientific investigations" which have been authorised under the annual Parliamentary grant. The report is followed by a large series of special returns, official circulars, &c., together with reports by members of the medical staff on such matters as the distribution of plague, cholera, and yellow fever, outbreaks of infectious diseases, offensive nuisances from trade processes, the work done by the branches for food inspection and vaccine lymph preparation, and the work of the pathological laboratory. Some of the reports on the auxiliary scientific investigations are also included and appear at the end of the volume.

The medical officer, Dr. A. Newsholme, devotes a large portion of his report to consideration of the local prevalence of tuberculosis and to the measures for its treatment and prevention which have followed the institution of "sanatorium benefit," while he also refers to some instructive results obtained by Dr. A. Eastwood, Dr. A. S. Griffith, and Dr. F. Griffith in searching for evidence of tuberculosis in the bodies of children taken seriatim as they came for necropsy and irrespective of the causes of death. It will be convenient to review these sections of the report separately in the course of a subsequent article.

General Death-rate and Mortality according to Age.

After commenting on the reduction of death-rate from all causes and from infectious diseases which is apparent when the figures for 1912 are compared with the average experience of 1891–1900, Dr. Newsholme analyses the death-rate from all causes during the 11-year period 1901–1911 at the groups of ages 0–5, 5–10, 10–15, and 15–20. The result, as shown in a series of curves, is a steady improvement at each age, partly interrupted in 1911 in consequence of the exceptionally hot summer of that year. The fall in the mortality of infants under one year is particularly striking. Attention is drawn in this connexion to the special report issued last year on the incidence and causes of infant mortality in 241 urban areas in England and Wales,[2] and to the observations by Dr. T. H. C. Stevenson in the 1911 report of the Registrar-General for England on the statistics of infant mortality in the chief groups of occupations. Among the families of army officers in 1911 the infant mortality per 1000 births was only 44, of naval officers and solicitors 41, of medical practitioners 39. These figures must be compared with the average ratio of infant mortality among artisans of 113, among miners of 160, among unskilled labourers of 152, and among agricultural labourers of 97 per 1000 births. The rate for the middle classes generally was only 61 per cent. of the total mortality rate of the country among legitimate infants.

The report bears tribute to the value of the great alterations in the presentation of national statistics that have taken place in the office of the Registrar-General, and have borne fruit in the annual report of that officer for 1911. These reforms include the substitution of administrative for registration areas; the better allocation of deaths to the normal place of residence; the adoption of the international list of causes of death; the publication of a number of rates annually and a standardised death-rate for each area of sanitary administration; the comparison of mortality from numerous diseases and from all causes in large geographical divisions; and the attempt to analyse the relative frequency of complications and sequelæ in acute infectious diseases.

Pathological Means for Diagnosing Disease.

The Departmental Committee on Tuberculosis in their final report stated their opinion that, in addition to the research work they proposed out of the funds provided under the National Insurance Act, there should be a general extension throughout the United Kingdom of clinical laboratories for the better diagnosis and treatment of disease. Dr. Newsholme gives in an appendix to his report the replies to a general circular sent to county and county borough councils inquiring the extent to which laboratory aids to diagnosis have been supplied by them. These aids were found to be limited in the main to enteric fever, diphtheria, and tuberculosis, examination for other infectious disease being rarely undertaken. The work, as a whole, was carried on in much larger amount in the boroughs than in the counties, and in each group great variations were met with in the extent to which bacteriological work was undertaken and utilised. Dr. Newsholme contrasts these municipal and county undertakings with the much wider field which is covered in the laboratories of most voluntary hospitals, from some of which special returns were obtained, and states his view that in order that a satisfactory medical service may be secured throughout the country facilities for work similar to that being done in hospitals will need to be offered to medical practitioners generally.

Acute Infectious Diseases.

The behaviour of certain of the acute infectious diseases since 1901 is considered seriatim, mainly by comparison of the mortality rates for England and Wales. The decline in the mortality rates of scarlet fever, diphtheria, and enteric fever has in each instance been conspicuous. Under diphtheria reference is made to an example of continued presence of diphtheria bacilli of proved virulence in the throat of a patient eight months after attack, and to the occurrence in the rural district of Saffron Walden of 15 cases of the disease traceable to a patient discharged from hospital who proved to have a suppurating sore on the scalp which contained virulent diphtheria bacilli. In regard to enteric fever, the mortality of which in 1912 was only one-fifth of what it was in 1881–90, the volume contains some very instructive reports from the medical inspectors of the department, which in most cases were separately published last year and then received notice in THE LANCET. These include an investigation by Dr. S. W. Wheaton of an outbreak in Strood (borough of Rochester) due to the pollution of a public water-supply from a well sunk into the chalk close to a number of soakaway cesspools and drains to which cesspools were connected; an extensive outbreak of enteric fever in the small Hampshire town of Ringwood, traced by Dr. H. A. Macewen to drinking water derived from a small stream which passes through the village; an epidemic in Colne in Lancashire, investigated by Dr. J. R. Hutchinson and referred to milk from a farm at which an unsuspected case of enteric fever was present; another in Harwich and its neighbourhood, in which Dr. S. M. Copeman ascertained that the outbreak had its origin in the supply of milk derived from a farm on which there was some reason to

[1] London: Wyman and Sons, Fetter-lane. Edinburgh: H.M. Stationery Office. Dublin: E. Ponsonby. Colonial and Foreign, Fisher Unwin, London. Cd. 7181. Price 4s.

[2] THE LANCET, Jan. 10th, 1914, p. 129.

suspect that a temporary milker was a carrier case and had caused the infection; and finally a very instructive case of carrier infection by means of milk occurring in the West Riding of Yorkshire and investigated by Dr. Copeman in conjunction with Dr. Sutherland, the assistant medical officer of health of the county. The condition of the carrier in this case presumably dated back to an attack of enteric fever in 1906, since when she appears to have been responsible for five separate appearances of enteric fever involving from first to last about 60 cases in different sanitary districts. On two of these occasions her employment at dairy farms had given opportunities for infection to be conveyed by means of milk to a considerable number of persons outside the household in which she was living.

Duration of the Enteric Fever "Carrier Condition."

A supplement to the report, by Dr. J. C. G. Ledingham, gives the result of the bacteriological examination of fæces and urine from patients who had been discharged from the Metropolitan Asylums Board's hospitals convalescent from enteric fever. These patients were followed up in their homes by several of the metropolitan medical officers of health, and the examinations were facilitated by the fact that for two years, from February, 1909, to February, 1911, Dr. G. E. Cartwright Wood had systematically examined specimens from all enteric fever patients on their discharge from the Asylums Board hospitals. Thus in the collection of material from cases which had resumed their ordinary vocations, it was possible to obtain a series divided into two groups: the larger, in which the hospital results on discharge were negative, and the smaller, in which they were positive. Rejecting for comparative purposes all cases in which less than three examinations, at intervals of a month or longer after discharge, were made, Dr. Ledingham obtained 148 cases, of which 99 fell in the first group and 49 in the second. The first group was found to contain no carriers, while in the second eight cases were found, in three of which the carrier condition was probably only temporary, and in five more permanent. In one case the carrier condition remained after a period of over three years. The conclusion may be drawn that if, on sufficient and competent examination of the excreta of enteric fever cases at the time of convalescence, the result is negative, the subsequent development of the carrier state is improbable; if, on the other hand, it is positive, the possibility of the carrier condition remaining requires to be taken into serious account. Dr. Newsholme points out that Dr. Ledingham's observations tend to simplify the work of the medical officer of health who desires to follow up convalescent enteric fever cases in order to take precautions against carriers. He also insists on the importance of action to prevent the carrier case from being employed in the preparation of food, and commends the action recently taken in Manchester to make small weekly payments to a carrier known to have caused enteric fever, on condition that the woman in question stopped keeping lodgers, a business on which she was formerly dependent.

Measles.

A curve of measles mortality in England and Wales from 1881 onwards is given, which shows that since 1896, while the usual biennial augmentations of this disease have occurred, the greater and more formidable epidemics characteristic of some earlier periods have not reappeared, and as a whole the range of the measles death-rate has been at a lower level. London suffered severely from measles in 1911, but the death-rate in that year, 0·57 per 1000, was greatly exceeded in 1898 and in some previous years. Dr. Newsholme observes that it cannot at present be affirmed that the reduced death-rate from measles will persist, but it appears likely that the general improvement in hygiene and in the care of the sick has had a material influence in reducing the death-rate from this disease. Notwithstanding this reduction, measles is still sufficiently formidable, and caused 12,696 deaths in England and Wales, including 1790 in London, during 1912. Compulsory notification of all recognised cases of measles under the Infectious Disease (Notification) Act has not in the past had any marked success, and a number of local authorities who had added measles to the list of notifiable diseases have since obtained the sanction of the Local Government Board to revoke the order requiring this notification. Dr. Newsholme remarks, however, that probably the notification of the first cases in a family by the medical attendant or by the parent would be helpful, and notes that the city of Manchester has recently obtained powers making it obligatory on the parents of all children suffering from measles or whooping-cough to notify the cases.

The volume contains the report of an inquiry under the Board's scientific grant which was undertaken by Dr. H. Thursfield regarding the bacterial causes of death in measles. The disease is fatal principally through broncho-pneumonia and other complications, and it is possible that it is the secondary infections associated with these complications more than the measles organism itself which are mainly responsible for the fatal result. Dr. Thursfield, who adopts this hypothesis, studied a series of measles cases fatal from broncho-pneumonia, and his results indicate that the death is most frequently associated with septicæmia set up by streptococcus pyogenes (18 out of 31 cases), and less often with pneumococcus infection. The latter appeared principally in the cases which died comparatively early, at the end of the first or beginning of the second week. The bacillus influenzæ also was found to play a part in the production of broncho-pneumonia. The suggestion is made that measles cases in which streptococci are found in the fauces should be strictly isolated from other measles patients, and that in measles generally more attention should be paid to cleansing the fauces and mouth than is now usually the case.

Cerebro-spinal Fever and Poliomyelitis.

Under this heading the report contains instructive diagrams of notified cases of these diseases week by week during 1912, distinguishing those in urban and in rural districts. In 1910 and 1911, when epidemic poliomyelitis was ascertained to be present in considerable amount in England and Wales, the cases were observed chiefly in country districts and in small towns. In 1912, on the contrary, 135 cases were notified in London, 586 in provincial urban districts, and 118 in rural districts; in terms of population approximately twice as many cases were observed in urban as in rural districts. From a separate statement supplied by Dr. R. J. Reece it appears that, judging from the notifications, the fatality of poliomyelitis was 13 per cent. and that from cerebro-spinal fever 70 per cent. About three-fourths of the poliomyelitis cases were children under 5, and in at least half of the total cases of this disease permanent paralysis of one or more groups of muscles occurred. Dr. Newsholme advises that medical officers of health should exercise some measure of supervision over children who have in recent months suffered from this disease, in order to advise parents to secure the best treatment available.

Small-pox; Vaccination Returns; Vaccine Lymph.

Only 121 cases of small-pox were notified in England and Wales in 1912; single cases or small groups of cases occurred in London in two metropolitan boroughs, in 32 sanitary districts in the provinces, and in six port sanitary districts. A somewhat greater prevalence occurred in Bristol. All but six of the total cases were isolated in hospitals, and an appendix to the report analyses the condition of these cases in respect of their vaccination. Another appendix gives a digest of the local vaccination officers' returns with regard to children whose births were registered in 1911. For England and Wales the percentage of "acceptance" of vaccination was 52·3 in that year, continuing the fall which has set in since 1905, when the corresponding figure was 75·8. The official returns relate only to children whose births are registered within a given 12 months, and take no cognisance of later vaccinations under the influence of local apprehension of small-pox, but they show undoubtedly that "the proportion of the population which is not protected against small-pox by vaccination is slowly increasing." During the 12 months ended March 31st, 1913, 615 public vaccinators received special awards under Section 5 of the Vaccination Act, 1867. Dr. F. R. Blaxall reports on the work of the Government Lymph Establishment; over 384,000 tubes were sent out during the year, and used principally for primary vaccinations, which gave a case success of 99·4 per cent., and an insertion success of 93·1 per cent.

Epidemiology of Plague, Cholera, and Yellow Fever.

After referring to the work of the International Health

Office, to which the Local Government Board furnishes the British representative, the report epitomises the study of the prevalence of plague, cholera, and yellow fever throughout the world in 1911 and 1912, which has been made by Dr. R. Bruce Low, and occupies a large section of the volume. This collection of information as to the prevalence, rise, and fall of these diseases in different countries must have entailed a great amount of labour and constitutes a very valuable record. In regard to plague, it is interesting to note that in India, where the deaths numbered over 800,000 in 1911, the disease now seems to be somewhat rapidly subsiding.[1] Fortunately, the terrible experiences of Manchuria in 1910–11, when over 50,000 persons died from pneumonic plague, were not repeated, and beyond some scattered cases nothing was heard of plague in this northern province of China up to the end of 1912. The account of cholera includes a description of the methods adopted at New York in 1911 to detect carrier cases among emigrants from the Mediterranean ports by means of rectal swabs. The director of the State laboratories boarded the vessel with a supply of tubes of culture media and sterile swabs, and the passengers were brought to him one by one with loosened clothing. As they successively bent over a chair the director inserted his swabs with a single movement and with such dexterity that, it is said, 265 specimens could thus be obtained in an hour. Altogether about 27,000 persons were examined, of whom 26 were said to have proved infected by cholera. An account of the world prevalence of yellow fever is for the first time added to this series.

RESCUE APPARATUS FOR USE IN POISONOUS ATMOSPHERES.

A RECENT law has placed upon owners and managers of coal-mines the onus of providing portable apparatus to enable rescue work to be conducted in mines where the atmosphere at the moment may be irrespirable. But no steps have been taken to ensure that the apparatus provided shall conform to any definite standard of efficiency, or that the men who may be called upon to use it shall be properly trained beforehand in its technique. As a matter of fact, several valuable lives have been lost in late years through misplaced confidence in rescue apparatus of various kinds; more, probably, than have been saved by the same means. In these circumstances the Doncaster Coal Owners' Committee commissioned Dr. J. S. Haldane to investigate the various types of such rescue apparatus which are on the market, to report on their relative merits, and to point out such defects as he might discover in them. By the courtesy of the committee a copy of Dr. Haldane's report has been submitted to us; and we learn also that in three months' time he will repeat his tests to ascertain whether effective improvements have been introduced by the manufacturers. Meanwhile, Dr. Haldane is carrying out researches upon the smoke helmet and reviving apparatus.

The report now before us begins by recapitulating in simple form the admitted facts of physiology as they concern the respiratory interchange of gases in various states of rest and exercise. From this are deduced the minimum requirements of oxygen supply to, and carbon dioxide absorption from, a man who may have to do hard physical work in an irrespirable atmosphere for as long as two hours at a stretch. Then some five forms of patent apparatus are subjected to practical tests with a view to discovering how they comply with those requirements, and how they compare respectively for portability, reliability, safety, convenience, durability, and similar important factors. The results are of great theoretical interest and of even greater practical importance. All the five forms of apparatus possess such grave faults that none of them earns Dr. Haldane's approbation. Each has its own definite merits in various respects, but in certain particulars not one of them is satisfactory, so that a mere combination of the best points of each would not alone provide the perfect instrument. Stress is also laid upon the necessity for complete familiarity with his apparatus on the part of any man who risks his life underground by wearing one in a poisonous atmosphere; in other words, of the all-importance of preliminary training. Dr. Haldane well points out that vision and hearing must be left as free as possible. When penetrating along mine roads wrecked by an explosion or damaged by fire, steam, and so on, it is essential to avoid loose timber or stone projecting from the roof. Any man of over average height who has been down a coal mine will remember, doubtless, that only about 5½ feet separate the floor and the roof. Not only may a man who cannot see clearly when wearing a rescue apparatus bring down upon himself an avalanche of rock or timber, but he is also even more likely to injure himself or his apparatus by collisions with the walls or roofs of the gallery he is working in. Hence, Dr. Haldane disqualifies the smoke-helmet type of apparatus, preferring the mouthpiece pattern. A half mask is more comfortable than the latter, but less efficient in his judgment. It is also undesirable that the apparatus should project from the head or shoulders of the wearer; some of those which Dr. Haldane tested were greatly superior in this requirement to others. The oxygen cylinder type is better than that in which liquid air is employed in that it can be quickly put into use or out of use, whereas liquid air takes time to get going and cannot be prevented from wasting when its use is temporarily suspended. Another important quality of the ideal apparatus is that it should be capable of being easily, quickly, and certainly tested when required in an emergency: there are some intricate details connected with this point attention to which is vital. Again, the apparatus should be invulnerable to moderate trauma, since knocks and jolts are inevitable in the nature of things when it is in use. It should be undisturbed by high temperatures, and as incapable as may be of leakage. Finally, it must fulfil the physiological requirements already mentioned.

"It is quite evident," says Dr. Haldane, "from the results of our experiments that a number of serious and more or less dangerous defects exist in rescue apparatus at present in use in this country and in the manner of using them. The sooner these defects are recognised, the sooner will they be remedied, or adequate means be taken to guard against harm resulting from them." With this opinion, after reading Dr. Haldane's account of his experiments, it is impossible to disagree. Medical men, who are best qualified to comprehend his account of the physiological requirements and his criticism of the ways in which they are at present violated in rescue apparatus, might well turn their inventive powers to the problems thus presented, for not only is there the surety of fame for the successful inventor, but of material prosperity as well.

[1] See THE LANCET, Dec. 27th, 1913, p. 1846.

WEST AFRICAN MEDICAL STAFF DINNER.—The winter dinner of the West African Medical Staff, which took place on Jan. 21st at the Grand Hotel, London, W.C., was a pleasant and sociable function, distinguished by a degree of camaraderie resembling that to be found in a well-conducted regimental mess, rather than the stereotyped formality that so often characterises the ordinary banquet. Dr. W. T. Prout, C.M.G., medical adviser to the Colonial Office, presided, the vice-chair being occupied by Mr. J. P. Fagan, late deputy P.M.O. for Northern Nigeria. The unusual and highly commendable feature of the West African dinners is the fact that speechmaking is curtailed to the minimum. After the Royal toast the President briefly proposed the toast of "The West African Medical Staff." Notwithstanding the existence of certain grievances, he said, the service was a very good one—a sentiment which received the cordial support of those present. Mr. G. Fitzjames Darker proposed the health of "The Guests" in a cordial and kindly manner, which was responded to by Mr. Kenneth Millican and by Mr. Pontifex, the latter of whom, in detailing the services rendered by medical science, unintentionally occasioned great merriment by citing as an instance the fact that sanitation had materially decreased the "birth" rate. The company then retired to the ante-room, where the rest of the evening was spent in clublike intercourse. Before the meeting broke up Mr. H. A. Foy proposed the health of Mr. Fagan, to whose unremitting zeal and energy the success of this dinner, as of many preceding ones, was due, and Mr. Fagan replied in a very humorous speech. The attendance was fair, though not so large as it ought to have been, considering the number of officers from the coast home on leave.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8490 births and 6098 deaths were registered during the week ended Saturday, Jan. 24th. The annual rate of mortality in the 96 or 97 towns, which had been 18·6, 19·3, and 17·0 per 1000 in the three preceding weeks, rose to 17·5 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual death-rate in these towns averaged 17·9, against 18·6 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 7·8 in Leyton, 8·6 in Ilford, 8·8 in Edmonton, 9·0 in Cambridge, and 9·3 in Walthamstow, to 24·3 in Plymouth, 24·5 in Bath, 24·7 in Rotherham, 26·1 in Barnsley, and 26·7 in Wolverhampton.

The 6098 deaths from all causes were 181 in excess of the number in the previous week, and included 343 which were referred to the principal epidemic diseases, against 355 and 329 in the two preceding weeks. Of these 343 deaths, 79 resulted from whooping-cough, 70 from measles, 68 from diphtheria, 68 from infantile diarrhœal diseases, 41 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·0, against 1·0 and 0·9 per 1000 in the two preceding weeks. The deaths attributed to whooping-cough, which had been 76, 64, and 66 in the three preceding weeks, further rose to 79 last week; of this number 15 were recorded in London, 7 in Birmingham, 6 in Manchester, 6 in Sheffield, 4 in West Ham, 4 in Liverpool, and 3 each in Leicester, Leeds, and Swansea. The deaths referred to measles, which had decreased from 80 to 55 in the four preceding weeks, rose to 70 last week, and caused the highest annual death-rates of 1·4 in South Shields, 1·6 in Rhondda, 1·8 in Great Yarmouth, 2·0 in Dudley, 2·8 in Burnley, and 6·8 in Barnsley. The fatal cases of diphtheria, which had risen from 60 to 70 in the four preceding weeks, were 68 last week, and included 13 in London, 7 in Manchester, 5 in Leeds, and 3 each in Tottenham, West Ham, Portsmouth, and Nottingham. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 80, 89, and 80 in the three preceding weeks, further declined to 68 last week, of which 14 were recorded in London, 7 in Birmingham, 7 in Manchester, 3 in Liverpool, 3 in Salford, and 3 in Rhondda. The deaths referred to scarlet fever, which had been 34, 43, and 37 in the three preceding weeks, rose to 41 last week, and included 6 in London, 6 in Birmingham, 4 in Salford, and 3 in Merthyr Tydfil. The fatal cases of enteric fever, which had been 16, 28, and 21 in the three preceding weeks, further fell to 17 last week, of which 3 occurred in London, 3 in Sheffield, and 2 in Salford.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily decreased from 4143 to 3676 in the seven preceding weeks, had further declined to 3567 on Saturday last; 375 new cases were admitted during the week, against 425, 416, and 388 in the three preceding weeks. These hospitals also contained on Saturday last 1077 cases of diphtheria, 239 of whooping-cough, 64 of enteric fever, 55 of measles, and 1 of small-pox. The 1577 deaths from all causes in London were 108 in excess of the number in the previous week, and corresponded to an annual death-rate of 18·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 423, 511, and 400 in the three preceding weeks, rose to 421 last week, and were 68 above the number recorded in the corresponding week of last year.

Of the 6098 deaths from all causes in the 97 towns, 207 were attributed to various forms of violence, and 493 were the subject of coroners' inquests. The causes of 47, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, and in 59 other smaller towns. Of the 47 uncertified causes of death, 16 were recorded in Birmingham, 13 in Liverpool, 2 in Dudley, 2 in Burnley, and 2 in South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1167 births and 919 deaths were registered during the week ended Saturday, Jan. 24th. The annual rate of mortality in these towns, which had been 20·3, 20·2, and 20·4 per 1000 in the three preceding weeks, further rose to 20·9 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual death-rate in these towns averaged 20·5, against a corresponding rate of 17·9 per 1000 in the 97 large English towns. Among the several Scotch towns the death-rate last week ranged from 12·6 in Motherwell, 13·8 in Perth, and 14·0 in Kirkcaldy, to 26·8 in Greenock, 27·1 in Hamilton, and 32·3 in Kilmarnock.

The 919 deaths from all causes were 23 in excess of the number in the previous week, and included 100 which were referred to the principal epidemic diseases, against 79 and 67 in the two preceding weeks. Of these 100 deaths, 51 resulted from measles, 19 from diphtheria, 15 from scarlet fever, 9 from infantile diarrhœal diseases, 5 from whooping-cough, and 1 from enteric fever, but not one from small-pox. These 100 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·3, against 1·0 per 1000 in the 97 large English towns. The deaths attributed to measles, which had been 50, 36, and 29 in the three preceding weeks, rose to 51 last week, of which 25 occurred in Glasgow, 5 in Edinburgh, 5 in Greenock, 4 in Leith, and 3 in Ayr. The deaths referred to diphtheria, which had been 12, 14, and 13 in the three preceding weeks, rose to 19 last week, and included 5 in Glasgow, 5 in Edinburgh, 5 in Aberdeen, and 2 in Dundee. The fatal cases of scarlet fever, which had been 7, 9, and 8 in the three preceding weeks, rose to 15 last week; 5 deaths were registered in Glasgow and 4 in Aberdeen. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 11, 12, and 8 in the three preceding weeks, were 9 last week, of which 4 were recorded in Glasgow, 2 in Paisley, and 2 in Greenock. The deaths referred to whooping-cough, which had been 5, 5, and 9 in the three preceding weeks, declined to 5 last week, and included 2 in Glasgow. The fatal case of enteric fever was registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had steadily increased from 139 to 230 in the five preceding weeks, were again 230 in the week under notice; 26 deaths were attributed to different forms of violence, against 33 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 618 births and 550 deaths were registered during the week ended Saturday, Jan. 24th. The annual rate of mortality in these towns, which had been 25·7, 25·4, and 21·6 per 1000 in the three preceding weeks, increased to 23·8 per 1000 in the week under notice. During the first three weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·6 per 1000; in the 97 large English towns the corresponding rate did not exceed 17·9, while in the 16 Scotch towns it was equal to 20·5 per 1000. The annual death-rate last week was equal to 28·4 in Dublin (against 18·2 in London and 20·6 in Glasgow), 23·8 in Belfast, 24·5 in Cork, 16·5 in Londonderry, 14·9 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 18·8 per 1000.

The 550 deaths from all causes were 50 in excess of the number in the previous week, and included 39 which were referred to the principal epidemic diseases, against 44 and 38 in the two preceding weeks. Of these 39 deaths, 10 resulted from whooping-cough, 9 from infantile diarrhœal diseases, 8 from measles, 7 from diphtheria, 3 from enteric fever, and 2 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·7 per 1000; in the 97 large English towns the corresponding rate did not exceed 1·0, while in the 16 Scotch towns it reached 2·3 per 1000. The deaths attributed to whooping-cough, which had declined from 10 to 4 in the four preceding weeks, rose to 10 last week, and comprised 5 in Belfast, 2 in Dublin, 2 in Tralee, and 1 in Lisburn. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 6, 7, and 11 in the three preceding weeks, fell to 9 last week, of which 5 were recorded in Dublin. The fatal cases of measles, which had been 7, 8, and 6 in the three preceding weeks, rose to 8 last week, and included 4 in Dublin. The deaths attributed to diphtheria, which had been 7, 6, and 2 in the three preceding weeks, rose to 7 last week, of which 6 occurred in Dublin and 1 in Lisburn. The deaths referred to scarlet fever, which had been 3, 13, and 12 in the three preceding weeks, declined to 2 last week, both of which were registered in Belfast. Of the 3 fatal cases of enteric fever 2 were recorded in Dublin and 1 in Belfast.

The deaths referred to diseases of the respiratory system, which had been 162, 154, and 130 in the three preceding weeks, rose to 153 in the week under notice. Of the 550 deaths from all causes, 167, or 30 per cent., occurred in public institutions, and 14 resulted from various forms of violence. The causes of 20, or 3·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1913.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1913.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,518,191	—	2412	875	—	72	2	39	467	5	13	3885	9·0	—	20	23	50	50	14	143	300	0·7	6437	14·9
West Districts.																									
Paddington	142,210	—	81	38	—	3	—	—	17	—	—	139	10·2	—	1	2	3	2	1	5	14	1·0	222	16·2
Kensington	171,284	—	90	13	—	2	—	3	17	—	—	125	7·6	—	—	—	1	—	—	4	5	0·3	235	14·2
Hammersmith	123,745	—	83	14	—	—	—	1	15	—	—	113	9·5	—	—	1	2	—	—	1	4	0·3	175	14·5
Fulham	157,117	—	138	33	—	1	—	4	12	—	—	188	12·5	—	—	—	5	3	1	9	18	1·2	222	15·2
Chelsea	64,598	—	28	12	—	—	—	—	3	—	—	43	6·9	—	—	1	1	1	—	1	4	0·6	82	12·6
City of Westminster	154,810	—	40	12	—	3	—	1	5	—	1	62	4·2	—	—	—	—	—	—	1	1	0·1	199	14·1
North Districts.																									
St. Marylebone	114,532	—	38	15	—	1	—	—	9	—	—	63	5·7	—	—	2	—	—	—	2	4	0·4	149	14·9
Hampstead	86,346	—	29	16	—	—	—	—	5	—	—	50	6·0	—	—	1	—	1	—	3	5	0·6	93	11·8
St. Pancras	214,330	—	85	43	—	2	—	3	23	—	2	158	7·7	—	—	—	1	5	—	7	13	0·6	319	15·5
Islington	325,585	—	203	59	—	9	—	2	32	1	1	307	9·8	—	—	2	3	3	—	10	18	0·6	532	16·6
Stoke Newington	50,518	—	27	10	—	1	—	—	2	—	1	41	8·5	—	—	—	2	—	1	3	6	1·2	80	15·7
Hackney	223,353	—	140	42	—	4	—	2	22	—	—	210	9·8	—	—	2	2	1	—	5	10	0·5	305	14·3
Central Districts.																									
Holborn	46,949	—	13	5	—	—	—	—	1	—	—	19	4·2	—	—	—	—	1	—	1	2	0·4	77	17·2
Finsbury	84,679	—	28	5	—	5	—	1	12	1	—	52	6·4	—	—	—	—	2	—	5	7	0·9	136	16·5
City of London	17,916	—	1	3	—	1	—	—	2	—	—	7	4·1	—	—	—	—	—	1	—	1	0·6	32	19·4
East Districts.																									
Shoreditch	109,654	—	47	12	—	2	—	3	28	—	1	93	8·8	—	—	—	6	5	—	9	20	1·9	201	19·7
Bethnal Green	127,824	—	36	24	—	1	—	—	26	1	—	88	7·2	—	1	1	1	8	—	6	17	1·4	194	16·4
Stepney	275,300	—	67	45	—	3	1	4	34	—	—	154	5·8	—	1	1	—	2	—	7	11	0·4	382	15·1
Poplar	160,913	—	100	34	—	3	—	2	21	—	—	160	10·4	—	1	2	3	4	1	3	14	0·9	267	17·1
South Districts.																									
Southwark	188,487	—	140	27	—	3	1	—	33	2	—	206	11·4	—	4	3	—	2	1	6	16	0·9	317	17·6
Bermondsey	124,739	—	95	26	—	3	—	1	13	—	1	139	11·6	—	—	1	2	—	—	11	14	1·2	208	17·4
Lambeth	297,139	—	184	87	—	2	—	2	26	—	3	304	10·7	—	1	2	5	3	—	14	25	0·9	383	13·1
Battersea	167,464	—	146	23	—	3	—	1	8	—	1	182	11·3	—	2	—	3	1	3	6	15	0·9	242	15·2
Wandsworth	330,395	—	138	46	—	10	—	3	21	—	1	219	6·9	—	—	—	3	1	2	8	14	0·4	361	11·5
Camberwell	261,805	—	196	81	—	3	—	2	33	—	1	316	12·6	—	6	2	2	2	—	7	19	0·8	374	14·7
Deptford	109,280	—	50	29	—	—	—	—	23	—	—	102	9·7	—	3	—	1	—	1	2	7	0·7	166	15·6
Greenwich	96,015	—	27	17	—	1	—	—	9	—	—	54	5·9	—	—	—	1	—	—	2	3	0·3	134	14·4
Lewisham...	168,822	—	84	60	—	4	—	3	6	—	—	157	9·7	—	—	—	2	1	2	4	9	0·6	181	11·0
Woolwich	122,382	—	78	44	—	2	—	1	9	—	—	134	11·4	—	—	—	1	2	—	1	4	0·3	169	14·8
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1913.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the metropolitan boroughs and in the City of London. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 9·0 per 1000 of the population, estimated at 4,518,191 persons in the middle of last year; in the three preceding months the rates were 7·7, 10·4, and 11·0 per 1000 respectively. The lowest rates last month were recorded in the City of Westminster, St. Marylebone, Holborn, the City of London, Stepney, and Greenwich; and the highest rates in Fulham, Southwark, Bermondsey, Lambeth, Battersea, Camberwell, and Woolwich. The prevalence of scarlet fever showed a considerable decline from that recorded in either of the two preceding months; this disease was proportionally most prevalent last month in Hammersmith, Fulham, Southwark, Bermondsey, Battersea, and Camberwell. The Metropolitan Asylums Hospitals contained 3810 scarlet fever patients at the end of last month, against 2552, 3517, and 4006 at the end of the three preceding months; the weekly admissions averaged 445, against 402, 512, and 581 in the three preceding months. Diphtheria was rather less prevalent than it had been in either of the two preceding months; the greatest proportional prevalence was recorded in Paddington, Lambeth, Camberwell, Deptford, Lewisham, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 909, 1190, and 1188 at the end of the three preceding months, had declined to 1099 at the end of last month; the weekly admissions averaged 146, against 147, 184, and 158 in the three preceding months. Enteric fever also showed a diminished prevalence as compared with the two preceding months; this disease was proportionally most prevalent last month in Islington, Finsbury, Bermondsey, Wandsworth, and Lewisham. There were 51 enteric fever patients in the Metropolitan Asylums Hopitals at the end of last month, against 56, 77, and 72 at the end of the three preceding months; the weekly admissions averaged 9, against 11, 12, and 11 in the three preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Camberwell, and Deptford. The 39 cases of puerperal fever notified during the month included 4 in Fulham, 4 in Stepney, and 3 each in Kensington, St. Pancras, Shoreditch, Wandsworth, and Lewisham. Of the 5 cases of cerebro-spinal meningitis, 2 belonged to Southwark, and 1 each to Islington, Finsbury, and Bethnal Green; and of the 13 cases of poliomyelitis 3 belonged to Lambeth and 2 to St. Pancras.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the population of the several boroughs. During the five weeks ending Jan. 3rd the deaths of 6437 London residents were registered, equal to an annual rate of 14·9 per 1000; in the three preceding months the rates had been 13·3, 13·7, and 13·5 per 1000 respectively. The death-rates last month ranged from 11·0 in Lewisham, 11·5 in Wandsworth, 11·8 in Hampstead, 12·6 in Chelsea, and 13·1 in Lambeth, to 17·1 in Poplar, 17·2 in Holborn, 17·4 in Bermondsey, 17·6 in Southwark, 19·4 in the City of London, and 19·7 in Shoreditch. The 6437 deaths from all causes included 300 which were referred to the principal infectious diseases; of these, 20 resulted from measles, 23 from scarlet fever, 50 from diphtheria, 50 from whooping-cough, 14 from enteric fever, and 143 from diarrhœa and enteritis among children under two years of age. The lowest death-rates from these diseases last month were recorded in Kensington, Hammersmith, the City of Westminster, Greenwich, and Woolwich; and the highest rates in Paddington, Fulham, Stoke Newington, Shoreditch, Bethnal Green, and Bermondsey. Only 20 fatal cases of measles were registered last month, against a corrected average of 221 in the corresponding period of the five preceding years; of these 20 cases 6 belonged to Camberwell, 4 to Southwark, 3 to Deptford, and 2 to Battersea. The deaths from scarlet fever numbered 23, the corrected average being 24; 3 cases belonged to Southwark, and 2 each to Paddington, St. Marylebone, Islington, Hackney, Poplar, Lambeth, and Camberwell. The 50 fatal cases of diphtheria were 11 below the corrected average number, the greatest proportional mortality from this disease being recorded in Paddington, Fulham, Stoke Newington, and Shoreditch. The 50 deaths from whooping-cough showed a decline of 20 from the corrected average number, and caused the highest death-rates in Fulham, St. Pancras, Finsbury, Shoreditch, Bethnal Green, and Poplar. The 14 fatal cases of enteric fever were 3 below the corrected average number, and included 3 in Battersea, 2 in Wandsworth, and 2 in Lewisham. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in Fulham, Stoke Newington, Finsbury, Shoreditch, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was more than 60 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: G. Gibson to the *Indomitable* and F. J. Burns to the *Orion*, both on recommissioning. Staff-Surgeons: S. H. Vickery to the *Orion*, on recommissioning; and R. S. Osborne to the *Victory*, additional, for the *Birmingham*. Surgeons: A. R. Price to the *Indomitable*, on recommissioning; and C. V. Griffiths to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Captain William J. S. Harvey to be Major (dated Jan. 14th, 1914). Supernumerary Lieutenant Percival D. Warburton is restored to the establishment (dated Jan. 24th, 1914).

Supernumerary Lieutenant George E. Dyas is restored to the establishment (dated Jan. 24th, 1914).

Lieutenant Sumner H. Smith is confirmed in his rank.

Colonel F. H. Treherne, honorary surgeon to the Viceroy and Governor-General of the East Indies, has taken up duty at Meerut Cantonment as Assistant Director of Medical Services, vice Colonel E. Butt. Colonel C. Birt has relinquished the appointment of expert in tropical diseases to the Army Medical Advisory Board.

Lieutenant-Colonel D. Shanahan, on return home for duty from the Ninth (Secunderabad) Division of the Southern Army in India, has been appointed to the Eastern Command. Lieutenant-Colonel G. A. T. Bray has been selected for appointment as Deputy Surgeon to the Royal Hospital at Chelsea, vice Lieutenant-Colonel H. E. Winter. Lieutenant-Colonel J. M. F. Shine has been appointed to hold charge of the Military Hospital at Nowshera Cantonment. Lieutenant-Colonel H. I. Pocock has joined at Murree. Lieutenant-Colonel R. J. Copeland has taken up duty on the Headquarters Staff at York as Medical Inspector of Recruits to the Northern Command. Lieutenant-Colonel E. Eckersley has been placed under orders for transfer from the Seventh (Meerut) Division to the Fourth (Quetta) Division of the Southern Army in India. Lieutenant-Colonel H. M. Adamson has been selected for appointment to hold charge of the Military Hospital at Belgaum Cantonment. Lieutenant-Colonel G. F. H. Marks has joined at Dalhousie. Lieutenant-Colonel T. Du B. Whaite has been placed under orders to embark for a tour of service in the Third (Lahore) Division of the Northern Army in India.

Major M. Babington has been selected for appointment as Clinical Pathologist to the Queen Alexandra Military Hospital. Major M. J. Cromie has been placed under orders to embark for a tour of duty in the West Indies. Major J. A. Turnbull has been appointed to Kamptee Cantonment. Major J. V. Forrest has taken up duty in the London District. Major E. McDonnell has been transferred from Lydd to the Military Hospital at Shorncliffe. Major D. Harvey has been selected for appointment as Clinical Pathologist to the Royal Army Medical College at Millbank, vice Major J. C. Kennedy, who has embarked for a tour of service in India. Major W. C. Croly has taken up duty at Mount Abu. Major W. P. Gwynn has been appointed to the Dublin District. Major N. H. Ross has embarked for a tour of duty in India. Major H. G. F. Stallard has been transferred from Peshawar Cantonment to the Military Hospital at Mhow Cantonment. Major P. S. O'Reilly has taken up duty at Gravesend. Major E. E. Parkes has been ordered to embark for India. Major F. Harvey has embarked for a tour of service in India. Major E. P. Connolly has been transferred from the Military Hospital at Murree to Rawal Pindi Cantonment. Major A. H. Safford has taken up duty at Lucknow Cantonment. Major J. S. Bostock has been appointed to the Aldershot District. Major A. W. A. Irwin has been transferred from the Military Hospital at Clonmel to Limerick. Major G. A. Moore has been selected for appointment as Specialist in Otology to the Cambridge Military Hospital at Aldershot. An exchange has been approved on the roster for service abroad between Major L. Humphry and Major A. W. Hooper, D.S.O.. Major W. S. Harrison has been placed under orders to embark for a tour of service at Jamaica. Major W. R. Blackwell has been appointed Senior Medical Officer on board the transport s.s. *Rohilla* which left Karachi for Southampton on Jan. 16th with tour-expired troops.

Captain M. J. Lochrin has arrived home for duty from India. Captain T. H. Scott has been appointed to the Northern Command. Captain E. D. Caddell has been transferred to the Home Establishment. Captain H. Gall has

joined at Sialkot. Captain E. M. Middleton has arrived home for duty from India. Captain F. Worthington has been appointed to the Eastern Command. Captain H. St. M. Carter has been selected for appointment as Specialist in Advanced Operative Surgery to the Cambridge Military Hospital at Aldershot. Captain A. W. Howlett has arrived home for duty from India. Captain D. Ahern has been appointed to the Irish Command. Captain T. S. Coates has embarked for a tour of service in India. Captain A. P. O'Connor has been transferred from the Military Hospital at Cairo to Khartoum. Captain A. H. T. Davis has joined at Poona. Captain R. G. H. Tate has arrived home for duty from the Military Hospital at Lahore Cantonment. Captain W. E. Marshall has been appointed to the Irish Command on arrival from Egypt. Captain A. C. Amy has been transferred to the Home Establishment for a tour of duty from India. Captain W. J. Tobin has been transferred from the Military Hospital at Bangalore Cantonment to Madras. Captain A. H. Heslop has been appointed for duty on board the transport s.s. *Rohilla*. Captain R. G. Meredith has taken up duty in Ceylon. Captain J. G. Bell has joined the Military Hospital at Singapore. Captain T. H. Dickson has embarked for a tour of service in India. Captain T. C. Lucas, surgeon to the Governor of Bombay Presidency, has been granted four and a half months' combined leave of absence home from India. Captain O. R. McEwen has been appointed for duty on board the s.s. *Rewa*, which left Karachi for Southampton on Feb. 13th. Captain E. M. Pennefather has relinquished medical charge at Fethard and embarked for a tour of duty in India. The following Captains have taken up duty at the Royal Army Medical College for the courses of instruction for promotion to the rank of Major: G. De la Cour, W. H. Forsyth, R. W. D. Leslie, E. J. Kavanagh, A. H. Jacob, H. G. Gibson, and M. P. Leahy. Captain J. L. Wood, on arrival home from India, has been appointed to the Irish Command. Captain H. V. B. Byatt has been appointed to hold charge of the Military Hospital at Purandhur Cantonment. Captain D. G. Carmichael has taken over charge of the Cantonment Hospital at Khanspur.

Lieutenant F. D. H. Howell has been transferred from Lancaster to Liverpool. Lieutenant J. B. Grogan has been appointed to the Military Hospital at Cosham on transfer from Larkhill, Salisbury Plain. Lieutenant W. F. Christie has left Aldershot for a tour of service at the Military Hospital, Singapore. Lieutenant R. G. Shaw has been appointed to the Military Hospital at the Curragh Camp. Lieutenant C. Helm has been transferred to the Dublin District. Lieutenant W. H. Forsyth has been transferred from Netheravon, Salisbury Plain, to the Royal Victoria Military Hospital at Netley. Lieutenant S. P. Sykes has left the Royal Herbert Military Hospital at Woolwich for a tour of service in India. Lieutenant A. F. C. Martyn has been appointed to the Military Hospital at Aldershot. Lieutenant W. B. Laird has been placed under orders to embark for India. Lieutenant B. Biggar has joined at Cairo. Lieutenant E. C. Lang has been transferred from the Military Hospital at the Curragh Camp for duty at Kildare. Lieutenant W. Stewart has left the Colchester District for a tour of service in India. Lieutenant W. A. Frost has been transferred from the Military Hospital at Jubbulpore to Kamptee Cantonment. Lieutenant T. H. Balfour has been transferred from the Boards Camp to Fort George. Lieutenant O. W. J. Wynne has left the London District for a tour of service in India. Lieutenant C. J. Blaikie has been transferred from the Military Hospital at Aldershot to Ewshott. Lieutenant M. Burnett has been appointed to Winchester.

INDIAN MEDICAL SERVICE.

Brevet-Colonel H. F. Cleveland, assistant director of medical services to the Aden Brigade, has been appointed Honorary Surgeon to the Viceroy and Governor-General of the East Indies.

Lieutenant-Colonel J. M. Crawford, on return to duty from deputation at the Central Research Institute at Kasauli Cantonment, has been appointed to hold civil medical charge at Benares. Lieutenant-Colonel J. G. H. Hulbert has arrived home on leave of absence from India. The Chief Commissioner of Assam has appointed Lieutenant-Colonel H. E. Banatvala to be a Member of the Legislative Council, vice the Hon. Colonel R. N. Campbell, C.B., C.I.E., resigned. Lieutenant-Colonel C. Mactaggart, C.I.E., has taken up duty as Inspector-General of Prisons in the United Provinces of Agra and Oudh. The services of Lieutenant-Colonel B. B. Grayfoot have been replaced at the disposal of H.E. the Commander-in-Chief in India by the Home Department of the Government of India. Lieutenant-Colonel F. J. Dewes, on return from leave of absence, has been appointed to hold civil medical charge at Myingyan, vice Major F. V. O. Beit.

Major R. F. Baird has been transferred from Benares and appointed to hold civil medical charge at Gonda. Major F. A. L. Hammond, civil surgeon at Maymyo, has been placed on special deputation duty at Calcutta. Major D. McCoy has arrived home on leave of absence from India. Major J. E. Clements has been appointed for permanent duty in the Jail Department of the United Provinces of Agra and Oudh. Major W. G. Richards has been appointed to officiate as District Medical and Sanitary Officer at Salem.

Captain C. L. Dunn has been granted leave of absence home from India for six months. The services of Captain G. Holroyd have been placed temporarily at the disposal of the Government of the United Provinces of Agra and Oudh for employment in the Jail Department. Captain J. Anderson has been appointed to hold civil medical charge at Miranshah. Captain A. T. Pridham, Superintendent in the Burma Jail Department, has been appointed to hold executive and medical charge of the Central Jail at Mandalay. Captain A. M. Dick has been appointed to officiate as Civil Surgeon at Maymyo during the absence on deputation of Major F. A. L. Hammond. Captain M. G. C. McVean has been granted four months' extension of leave of absence home from India on medical certificate. Captain F. P. Wernicke has been appointed to hold civil medical charge of the Seoni District. Captain R. T. Wells has relinquished charge of the jail at Dera Ghazi Khan to Captain N. M. Wilson. Captain P. K. Tarapore has been appointed Superintendent of the Insein Jail. The services of Captain O. A. R. Berkeley-Hill have been replaced at the disposal of the Home Department of the Government of India on relief by Lieutenant-Colonel J. Ewens. Captain H. G. Stiles Webb has been appointed Chief Malaria Medical Officer in the Punjab during the absence home on leave from India of Major E. L. Perry.

Lieutenant C. M. Plumptre has been appointed to officiate as Agency Surgeon in Bhopal State.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade, Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Lewis W. Pockett resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 24th, 1914).

2nd East Anglian Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel John H. Stacey resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 24th, 1914.)

1st North Midland Field Ambulance, Royal Army Medical Corps: John Caldwell Grieve to be Lieutenant (dated Jan. 1st. 1914).

1st West Riding Field Ambulance, Royal Army Medical Corps: Captain Alexander D. Sharp to be Major (dated Jan. 24th, 1914).

2nd Welsh Field Ambulance, Royal Army Medical Corps: Arthur Frederick Bernard Shaw to be Lieutenant (dated Dec. 8th, 1913).

Welsh Clearing Hospital, Royal Army Medical Corps: Captain Ashley Bird, from the List of Officers attached to Units other than Medical Units, to be Captain (dated Dec. 20th, 1913).

ROENTGEN SOCIETY.—The next meeting of this society will be held on Tuesday, Feb. 3rd, at 8.15 P.M., at the London Hospital, Whitechapel, when Dr. Gilbert Scott will conduct visitors over the X Ray and Electro-Therapeutic Departments of the hospital, give a demonstration of the Wilson Portable Coil Apparatus, and show a number of plates. The honorary treasurer of the society, Mr. C. E. S. Phillips, Castle House, Shooter's Hill, Kent, reminds members that their annual subscriptions are now due.

THE SIXTH INTERNATIONAL CONGRESS OF SOCIAL WORK AND SERVICE.—Under the patronage of the King and Queen, and the presidency of Prince Arthur of Connaught, an International Congress dealing with State, municipal, and voluntary social work will be held at the London University, South Kensington, W., in the week ending June 5th, 1915. An executive committee, with Sir William J. Collins as chairman, has been formed, and among the members of the committee is Sir Shirley F. Murphy. The subjects at present selected for discussion are: (1) Thrift in its Relation to Relief; (2) International Provisions for the Assistance of Deserted Children; (3) The Assistance of Families of Prisoners and Extradited Persons; (4) The Care and Control of the Mentally Defective (general reporter Sir H. Bryan Donkin); (5) State Insurance and Hospitals; (6) The Relation of the Municipality to Public and Private Assistance; (7) The Housing of the Working Classes; and (8) The Work of School Care Committees. The membership subscription is 20*s*. All communications with reference to the congress should be addressed to the secretary or the treasurer at Denison House, Vauxhall Bridge-road, London, S.W.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 295.*)

XXXV.—LONDON: EVIDENCE IN FAVOUR OF THE ACT.

LONDON is so huge that a feeling of bewilderment naturally assails the bold individual who would attempt to describe what is happening in that vast metropolis even though called upon to deal with but one subject. But it must be remembered that, when that subject is the health and the maintenance of health of all employed persons under the income-tax limit, we are dealing with a matter whose bearings and ramifications are boundlessly extensive.

Again, it is particularly hard in London to draw general conclusions on anything; much of one's experience must be secured from isolated and individual circumstances. There is no place in the world where it is easier to hide than London, as every criminal knows. Neighbours do not fraternise with each other and there is little local life developed by local spirit. Nowhere do people live such isolated lives; and therefore investigations are specially difficult for want of connecting links which enable the investigator, when once started, to go from one to the other end of a chain till he has covered the ground mapped out. Still, it is easy to see in regard to our present subject, the working of the Insurance Act, that the dividing lines are very sharply defined in London. The partisans of the Act and the opponents of the Act do not merge. On the contrary, they are drawn up in battle array against each other. There is in London no mere reluctance to work the Act, but associations are specially organised in opposition of the Act. By such bodies the panel doctors are still denounced as traitors to the flag, and this is no mere outburst of fervid oratory, but is expressive of deep conviction. As a result of such denunciations, or rather it may be fairer to say of the spirit which has led to their utterance, the London panels are understaffed. Then while doctors have been refusing to serve, insured persons have, on their side, refused to avail themselves of the services of the panel doctors. As a consequence, a huge unallotted fund has accumulated, and the law does not say with sufficient distinctness how this money is to be utilised. Nevertheless, and though there are so many insured persons who keep away from the panel doctors, some of these practitioners have a far greater number of insured persons on their list than should be allowed.

Unequal Distribution of Doctors and Patients.

At the end of December, 1913, there were 1370 doctors on the London panel which corresponds with the London County Council area. Of these, 92 were medical officers of hospitals, asylums, and various institutions. For the ordinary panel practice there were 1278 medical men available and there are a little more than 1,500,000 insured persons. If evenly divided each insurance doctor should have 1161 persons on his list and an income of a little over £400 a year. But the insured persons are not evenly divided, and a quarter of a million, or a sixth of the total, have not selected any panel doctor whatsoever. That would mean an average of but 1000 per panel doctor, or £350 a year. Such averages, however, are utterly misleading when it comes to actual practice, for in London there are many panel doctors who have not 500 insured persons on their list, while others have several thousands. In one case the tremendous figure of 6000 is said to have been reached. The argument has been presented that many insured persons do not trouble to select a panel doctor before they are ill. In support of this contention it is stated that 75 per cent. of the insured who had inscribed their names on a doctor's list sought his advice during the course of the year. But if this was the reason why so many insured persons have as yet no doctor, it would be the same in all parts of London. The contrary is the case. It is in the better class residential suburbs, and especially in the West-end, where practitioners are much more numerous than elsewhere, that a very large amount of insured persons, and far more than a sixth of the total insured inhabitants of those quarters, have not thought fit to select a panel doctor. It is in districts where the Act is not popular that so many of the insured will not avail themselves fully of its benefits. Political antipathy, or perhaps a question of social prestige, and not freedom from illness accounts for the fact that a quarter of a million Londoners have not yet selected their panel doctor.

As an unfortunate contrast to this state of things it is just where there are the fewest doctors that the insured persons have displayed the most readiness to inscribe their names. Indeed, one of the great difficulties is the uneven distribution of medical practitioners over London, and one of the good effects of the Insurance Act is that it will tend towards at least a partial remedy of this defect. I have been told that in Shoreditch there is only one medical practitioner for every 5000 of the population. On the other hand, in Kensington there is one doctor for every 500 inhabitants.

The National Insurance Practitioners' Association.

When the British Medical Association was organising resistance against the measure in its earlier stages there was in London a conviction that a large body of practitioners were anxious to take service under the improved Government terms. It was very evident that in the industrial areas the income and the sense of security of the working man's doctor would be greatly improved. Any amount of bills were never paid; the medical practitioner lost his drugs and got nothing for his time or trouble. If the thought that very probably the patient would not pay his bill could be removed the doctor would not hesitate to attend. Secure in the possession of a sufficient, even if still a modest, income, the poor man's doctor should certainly be better able to put his heart into the work, and vast multitudes throughout the East and industrial districts of London get better medical attendance than they had ever enjoyed before. With the prospect of such solace where it is most needed, the demurring of practitioners more favourably situated in respect of *clientèle*, but who feared to lose fees from a proportion of their patients now coming under the operation of the Act, might well be ignored, said those who were reconciled to the extension of contract practice by the promises of reform which it offered. A movement was started to protect those practitioners who were anxious to go on the panel.

The National Insurance Practitioners' Association

came into being early in December, 1912. A month, however, had barely elapsed when the British Medical Association itself withdrew from its attitude of uncompromising opposition and allowed its members to go on the panel. Thus the newly formed National Insurance Practitioners' Association lost its principal *raison d'être* before it had time to come completely into being. It determined to cease active propaganda, but to maintain a watching brief. New members who offered to join were not encouraged, I am told, and after the month of May last were positively refused. There was, indeed, not much active work to do. In London, as in Edinburgh, a very large number of practitioners refused to join the panel, but in the greater part of the country the resistance melted away. The association was to have helped the victims of adherence to the principles of the Act, but there seemed very few victims. At first some doctors were boycotted because they had enrolled themselves for panel service, but it is impossible to say that much overt hostility of this sort went on. Consequently the new association devoted its energies to improving the conditions of panel practice. They were thus mainly instrumental in doing away with the huge book in which detailed entries had to be made, and substituting for it the much simpler record card system. In December, 1913, after having lived for just one year, the National Insurance Practitioners' Association decided that it had fulfilled its mission and that its continued existence was no longer needed. The society dissolved, its members being advised to join the British Medical Association and the Local Panel Committees. It is to these committees that the practitioners who are working the Act in London seem principally willing to entrust their future prospects. The British Medical Association, although it has in part absorbed the National Insurance Practitioners' Association, is accused of being under the guidance of members of the profession not personally involved in the working of the Act, so that it cannot properly understand the position of a great majority of practitioners who hold modest positions and do the hard and least agreeable work. The British Medical Association, I have been told more than once by those who are strongly in favour of the Act, has closed its eyes to the alleged fact that at least 10,000 medical practitioners in the kingdom were not only willing to go on the panel, but so realised the great advantages held out to them that nothing could possibly keep them away from accepting service under the Insurance Act.

Improvement of Poor Practices.

The practitioners in the industrial districts are so much better off now that they can afford to refuse badly paid work. Where a practitioner was ready and willing to accept midwifery cases paid at from 10s. to 15s., he is to-day asking for a guinea or 30s. This would have caused ill-feeling, were it not that the poor can see two sides to the matter. Formerly a poor family would pay the medical attendant very inadequately, 10s. to 15s. out of their meagre wages. To-day the maternity benefit supplies enough money to pay the doctor adequately. Formerly the fee would cost the family perhaps more than a week's wages. If the poor used to pay less they had to save to pay, and had not the right to expect such good attendance as that to which they are now entitled, nor was there a great force of public opinion behind them to raise a storm if they were not properly treated.

The quality of service given in return for the better and safer pay has been questioned, but I have come across, or been told of, little unedifying behaviour on the part of panel practitioners. But whether it be in regard to midwifery cases or other cases, I was very positively assured that no practitioner who does his work well need fear coming up before the Medical Service Subcommittee to answer a charge of neglect. The laymen who participated in such inquiries were keener than the medical men themselves in detecting flaws in the evidence. I was very emphatically assured that the laymen on the London Insurance Committee showed the greatest consideration for the medical profession. There were no complaints that the medical men's point of view had not been properly considered. Even in the rather difficult question of prescribing no trouble has arisen. The drug bill for London may exceed the eighteenpence per insured person, but it is still hoped to save threepence out of the floating sixpence, and these threepences come up in London to a total of close upon £19,000 to be added to the income of the panel doctors.

Under these greatly improved financial conditions it is maintained that the poor and industrial districts of London have now a fairly well paid medical service. What is in colloquial parlance termed "a rotter" cannot be regenerated by an Act of Parliament. Granted that there are black sheep among the medical profession—and of course there are, but the proportion is most creditably small—the modern doctor, the newly qualified practitioner, who enters upon his career need no longer degenerate as he used to do through service in an East-end dispensary. The sixpenny doctor is dying out because he can now afford to refuse patients who want to pay less than 1s. As the pay improves so will the attendance improve. Thus the claim that the health of the people is better cared for gains fresh force in these facts.

Such is the story from one point of view. In my next article I propose to give an outline sketch of the motives and methods of those who have resisted the Act in London.

(To be continued.)

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Moritz Katzenstein, *privat-docent* of Surgery, and Dr. Max Zondek, a well-known surgeon, whose specialties are kidney and bone operations, and Dr. Oskar Wagener, *privat-docent* of Otology, who has been temporarily lecturing in the Greifswald University, have been granted the title of Professor. Dr. Arthur Pappenheim, whose researches on the pathology of the blood in the "second" medical clinic of the Charité have received a good deal of attention, has been recognised as *privat-docent* of Medicine.—*Breslau:* Dr. Gustav Drehmann, a well-known orthopædic surgeon, and Dr. Hans Aron, formerly professor of physiology in the Manila University, also Dr. Karl Hueter, prosector of the Municipal Hospital, Altona, have been granted the title of Professor.—*Königsberg:* Dr. Walter Carl has been recognised as *privat-docent* of Surgery.—*Leipsic:* Dr. Georg Herzog has been recognised as *privat-docent* of Pathological Anatomy and General Pathology.—*Pavia:* Dr. Giuseppe Mariani has been recognised as *privat-docent* of Dermatology and Syphiligraphy.—*Prague (German University):* Dr. W. Rubeska, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Professor.—*Rome:* Dr. Paola Alessandrini has been recognised as *privat-docent* of Neurology.—*Salamanca:* Dr. Santamaria has been appointed to the chair of Clinical Medicine.—*Shanghai:* Dr. H. Dold, *privat-docent* of Hygiene and Bacteriology in the University of Strasburg, has been offered the chair of Hygiene.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

LEEDS.

Adoption of the Notification of Births Act, 1907.

THE city council, acting as the local authority for the city of Leeds, have adopted the Notification of Births Act, 1907, and by order of the Local Government Board this came into force in the city on Jan. 1st. A circular has been issued from the Town Clerk's office and sent to all medical men within the borough, setting out the provisions of the Act and the duties falling to be carried out by medical men in connexion with its adoption in Leeds. A covering letter from the medical officer of health has accompanied each circular asking for the coöperation of the profession in the working of the Act. Dr. J. Spottiswoode Cameron especially asks that medical men will indicate those cases in which a visit from one of the women inspectors would be of benefit. Of these women inspectors, who have done much good work in Leeds, there are at present six. These have under them four probationers, and it is the intention of the authorities to increase the number both of the trained inspectors and of those who are learning the work. The adoption of the Act in Leeds will, it is hoped, be attended with a lessening of the death-rate of infants, and may lead to an improved physique, especially among the lower classes.

The Leeds Public Dispensary.

The annual report of this institution shows a continuance of the useful work of the charity. In addition to a large out-patient department a very important part of the work consists in the attendance on necessitous patients in their own homes. Last year the number of visits made was 6760. Certain changes in the staff which have recently taken place should be mentioned. Mr. Michael A. Teale, who was appointed ophthalmic and aural surgeon some ten years ago, has resigned his position. It is Mr. Teale's intention to give up the practice of his profession and devote himself to art. Those who have been associated with Mr. Teale in his work and have known its excellence cannot but view his decision with regret, though they know that it is based on a long-cherished desire, and though they may see for him a successful career in his new work. With Mr. Teale's retirement Leeds finds itself without a member of the Teale family in active practice. This has not been the case for 116 years, for about the year 1797 Mr. Teale's great-grandfather began practice in the town. I have just been informed by Mr. T. Pridgin Teale that some of the patients seen by his grandfather had been attended to by his son during the earlier years of his work. Mr. Pridgin Teale is happily still with us, and though for a good many years he has been living in retirement from his profession he continues to take a keen interest in medical matters, and especially in those dealing with medical education. The vacancy created by Mr. Teale's resignation has been filled by the election of Dr. Harry Lee, and Mr. Teale was elected a member of the honorary consulting staff. As honorary physician Dr. J. le Fleming C. Burrow has been appointed to fill the position vacated by the resignation of Dr. G. W. Watson. Mr. A. Richardson takes the place of Mr. G. L Wells, whose death we have had recently to lament.[1] Dr. J. Godwin Greenfield has been appointed pathologist.

Jan. 27th.

MANCHESTER.

School Children and Cinematograph Shows.

THE Lancashire elementary education subcommittee has conducted an inquiry as to the effect of cinematograph shows on children attending the elementary schools of their area. Practically all the head teachers in the districts in which such shows exist agree that the shows are physically detrimental to the scholars in consequence of late hours, loss of sleep, and bad atmosphere. The subcommittee's finding is:—

> While conceivably cinematograph shows might be of some little use if arranged specially for educational purposes, it is doubtful whether, even then, the gain would outweigh other disadvantages. Under present conditions in the county there is no doubt that they serve no real educational good purpose.

In 28 districts there were 86 shows. The headmasters report that the majority of the children who attend these shows belong to the poorest families, and that over 50 per cent. regularly visit them. A number go three times a week and some every evening to the various houses. As to the effects on the children, the report says:—

> The pictures shown have lowered the moral sense; scholars think less of cruelty, lying, deception, and even theft; the children are less thrifty, they value money lightly, and derive a thirst for pleasure and amusement; some children actually steal to find money for admission.

In the opinion of the medical staff definite fatigue is caused by attendance at the shows, and the children who attend them are usually pale and tired. More especially in the smaller districts, where the picture houses are adapted buildings, there are overcrowding and bad ventilation, causing fatigue and favouring the spread of infectious diseases. It is proposed to send a copy of the report to the clerks of the county justices with a request that the latter will bring it forward when the time arrives for granting licences.

Notification of Births Act in Salford.

The Salford town council has decided to adopt the Notification of Births Act, and when the Local Government Board has announced its consent the Act will be put into operation. This Act was passed in 1907. Salford, however, had a method of its own for the notification of birth. When the Act is in force notification will be compulsory.

Measles to be no longer Notifiable in Oldham.

The Oldham health committee has decided to withdraw measles from the list of notifiable diseases.

Manchester Hospitals and the Need of Radium.

It has been suggested that a joint effort should be made in Manchester by the hospital boards to obtain a supply of radium for the treatment of malignant disease. It would appear that there are only two hospitals in Manchester in which hitherto any use has been made of radium—the Christie Cancer Hospital and the Skin Diseases Hospital. By a combination of the friends of the hospitals it is suggested that a sum of £4000 should be raised by subscription in order to

[1] THE LANCET, Nov. 29th, 1913, p. 1583.

obtain at least two separate quantities of 100 milligrammes each. Should the money be subscribed and the radium obtained, it is further suggested that a small joint committee should have control of its use, so that precedence shall be given to the most needy cases and to those in which there would be the greatest likelihood of good results. The question of raising a public fund to secure a supply of radium for the treatment of malignant and cancerous diseases in Manchester is under consideration by the board of the Royal Infirmary, which institution in 1912 had between 400 and 500 in-patients under surgical treatment for cancer, besides out-patient cancer cases and those undergoing X ray treatment, which rose in number from 32 in 1909 to 107 in 1912.

Jan. 27th.

BRISTOL.

Research in Bristol.

THE Colston Research Fund Committee, administering money handed to it by the University Colston Society of Bristol, has reported on another year's work. The report bears witness to the activity and catholicity of the spirit of investigation in Bristol. Among the researches that have been supported there are several of medical interest. The department of physiology is responsible for inquiries into the nature of surgical shock, the principles of rectal alimentation, industrial fatigue, and the auriculo-ventricular connexions of the human heart. This latter investigation derives its significance from the fact that it was Professor A. F. Stanley Kent, who now describes connecting tracts between auricle and ventricle other than the auriculo-ventricular bundle, who was responsible for the original discovery of that bundle. The establishment of these facts must lead to important modifications in modern cardiac pathology. Professor F. H. Edgeworth's work on the cranial muscles and their nerve-supply is also alluded to; and work is being carried on in the pathology department in regard to dental bacteriology. A typhoid carrier has apparently been cured, after many efforts, by the use of a specially prepared autogenous bacterial emulsion. Other subjects which bear indirectly on medicine are the effects of small electric currents at low voltage on micro-organisms, the work of M. Nierenstein in regard to the manufacture of cheese and the chemistry of the commercial tannins, and the principles of soap manufacture. It is clear that there is a group of practical investigators at work in Bristol, and that they have good premises to work in will be granted by anyone who inspects them. An important addition to the resources for medical research is the new pathological department of the General Hospital, while the chief handicap to original work in the field of medicine lies in the strong opposition, which is still maintained by a few influential people, to experiments on animals. Happily there are signs of a more enlightened attitude, and with this obstacle removed much should be achieved. Recently Professor F. Gowland Hopkins, representing the National Insurance Research Committee, visited the Bristol laboratories and made many useful suggestions as to the possibilities of organised and assisted research.

Somerset County Tuberculosis Sanatorium.

At the last meeting of the Somerset county council the Insurance Act Tuberculosis Sub-committee presented its report recommending the adoption of a site near Wells. An amendment asking for expert opinion on this site (which is alleged to be too low, too near the Sedgemoor marshes, and difficult as to drainage and water-supply) was defeated by 41 votes to 10, the majority evidently feeling that sufficiently expert opinion had already been expressed in favour of the site.

Bristol Insurance Committee.

Among the many data disclosed by the chairman of this committee in his recent references to the past year's work it is interesting to note that less than 12 per cent. of the deposit contributors, who number about 2500, had applied for sickness benefit. He also stated that there were 916 notifications of tuberculosis during the year, 376 of them among insured persons and 540 among the uninsured.

Lord Mayor of Bristol's Hospital Sunday Fund.

The collections for this fund were taken on Sunday last and the Lord Mayor has issued his appeal for help, which describes the work done by the four chief institutions (the General Hospital, the Royal Infirmary, the Children's Hospital, and the Eye Hospital), and states that they need an increase of £9000 in their annual income. As usual, the number of patients who attended during 1912 is used as a basis for this appeal. Last year the introduction of the National Insurance Act did not affect the collections as was feared; and this year's appeal points out that the Act has in no way lessened the need for special treatment such as the institutions alone can give.

Bristol Dispensary.

The work of this institution was sensibly diminished during 1913 as a result of the introduction of National Insurance. It is clear, however, from the remarks made by Mr. Fenwick Richards, the chairman, at the annual meeting, that not everyone has yet assimilated the idea that persons insured against sickness under the Act are provided for in respect of ordinary illness and therefore not in need of institutional medical care except under special circumstances. He asked subscribers to find out whether those who applied to them for dispensary notes were really in need of them, and a little care at this stage of the application would save the dispensary, as well as the applicant, a good deal of trouble.

Bristol Eye Hospital.

At the annual meeting of this institution the report which was read showed an increase in the amount of work done. There were 522 in-patients and 8559 out-patients; this included 140 operations for cataract and 3400 refraction cases. The total ordinary income was £2276 and the expenditure £2727; this sum shows, as the Lord Mayor remarked, that the hospital is economically managed, and he appealed for an increase in the list of annual subscribers.

Bristol Eye Dispensary.

The chief features of the annual report are that the number of new cases was 2946, a slight decrease as compared with 1912, owing partly to the Insurance Act and partly to an arrangement with the education authorities whereby refractions in school children are done elsewhere; the election of Mr. H. G. Doggett to the presidency in the room of Mr. P. J. Wasley, resigning after 20 years' service; and a favourable balance of £9 on the year's work.

Jan. 27th.

IRELAND.

The Certification Question.

THE outstanding question arising from the National Insurance Act and concerning the medical profession in Ireland for many months back has been that of payment for certificates given under the Act. It was hoped last August, when Mr. Lloyd George promised to find a sum of money sufficient to meet the demands of the profession, that a speedy settlement would be arranged. I understand that for some months past important negotiations have been proceeding between the Insurance Commissioners and the medical profession, and that, on the whole, the progress of the discussion was encouraging to the profession. It was confidently hoped that a scheme satisfactory to all parties would be settled. Having heard the opinions of the medical profession, I understand that the Commissioners then summoned a conference of representatives of the Friendly Societies. Here the difficulties begin. The wishes of the societies are so far removed from those of the profession as to render a settlement satisfactory to both parties almost impossible. The profession lays down as a first principle of any scheme of certification that the certificate is to be that of the patient's own medical attendant, or, to put it more accurately, that the certificate of the member's medical attendant is to be regarded as *primâ facie* evidence of fitness or unfitness. The societies, on the other hand, or rather those who speak for them, are demanding that the entire certifying should be done by special whole-time officers. In other words, they suggest that what is required is an extension of the system which, established last summer, has succeeded in satisfying no one. The Commissioners have no easy task to reconcile these divergent ideals. The point forgotten by the societies is that the object of demanding a medical certificate is not to place obstacles in the way of members obtaining benefits to which they are entitled. That medical referees have been employed by certain societies in Ireland for this sole purpose is one of the gravest scandals which have arisen under the National Insurance Act. The true object of the medical certificate should be quite as much to secure his rights for the sick member without delay or difficulty as to safeguard the funds of the society. This is recognised by the more experienced societies, who also realise the futility of trying to carry on insurance work in a state of active hostility to the medical profession. In their present demands these saner societies seem to have been carried away by the heat of a few officials of the newer and less experienced societies.

Guardians and Medical Certificates.

At a recent meeting of the Edenderry board of guardians a resolution was carried to the effect that no medical officer acting as locum tenens for a colleague in case of illness should sign a medical certificate for such colleague. The circumstances which led to such an astonishing principle being laid down were simply that one of the medical officers, Mr. W. R. G. Hamilton, was ill, and that his illness had been certified by his colleague, Dr. J. J. Kinsella, who was doing duty for him. At the following meeting of the board a letter of protest against the insult contained in the resolution was received from all the medical officers of the union. It is satisfactory that a full apology was at once tendered, the board admitting that the resolution was unwarranted and had been passed without consideration.

Election of a Dispensary Medical Officer.

Extraordinary scenes took place at the election by the Westport guardians last week of a successor to the late Mr. J. J. McGreal, whose death from poisoning was recently recorded in the press. The board room was crowded with visitors interested in the election, including several clergymen, who, by permission, addressed the board in favour of the several candidates. All the candidates pledged themselves to be bound in their private practice by a scale of fees drawn up by the board.

Belfast Hospital for Sick Children.

At the forty-first annual meeting of the supporters of the Belfast Hospital for Sick Children held on Jan. 22nd it was reported that 585 (325 medical and 260 surgical) patients were treated in the wards during the year 1913, and 4622 (2383 medical, 1503 surgical, 595 eye, ear, throat and nose, and 141 dental) in the extern department. Forty-five senior students are attending the cliniques. To meet current expenditure there is in hand a sum of £492 7*s.* 4*d.*, and during the past year there was an excess of income over expenditure of £126 19*s.* 9*d.*, and £176 11*s.* have been invested.

Jan. 27th.

PARIS.

Anticholera Vaccine.

Professor Babès, of Bucharest, a former pupil of the French school, who always keeps his most interesting communications for Paris, recently reported to the Académie de Médecine his results in Roumania during the Balkan war with anticholera vaccination. He considers its value established, and that it may now take its place in current therapy. But as it is valuable more particularly as a preventive its action on the development of an epidemic can be established only when an entire community exposed to the disease has been vaccinated. As with antityphoid inoculation, its protection is complete only after at least two inoculations; one is not sufficient. There is a negative phase, during which the subject is more susceptible. The second vaccination should take place from six to eight days after the first. This also is followed by a very slight negative phase, but confers subsequently a stronger and more lasting immunity, the duration of which, however, is at present only a matter of conjecture. Bacillus carriers have been vaccinated without accident or reaction, but such vaccination does not appear to diminish the time during which the bacilli can inhabit the intestine. Moreover, M. Babès thinks that bacillus carriers, on a careful investigation, will be found to be less numerous than is thought, and that in the great majority of cases they do not retain the vibrios more than from 2 to 5 days. M. Babès has also made another interesting observation in the isolation camps—viz., that those who present the first symptoms of cholera do not show vibrios in their stools at examinations made immediately preceding the symptoms. The incubation period of cholera, therefore, cannot be, as is commonly supposed, about 5 days, but only from 24 to 48 hours. As to the transmission of cholera germs by persons coming from infected regions, M. Babès holds that when they have left these regions for more than 14 days the transmission, if it occurs, is due neither to

bacillus carriers nor to those incubating the disease, but rather to the conveyance of the germs on the clothing, linen, or in food. Prophylaxis, according to M. Babès, consists in early recognition and immediate and complete isolation of the first cases, with a rigorous disinfection and prompt vaccination of all contacts and the seeking out and isolation of germ carriers, not to mention the supervision of drinking water and the disinfection of fruit and vegetables. M. Babès insists that bacillus carriers do not constitute a very great danger, and that they are not found after the close of the epidemic. It is, therefore, hardly likely that it is by their means that an epidemic extinguished in the autumn breaks out again in the following spring. The vaccine can be prepared *en masse* when an epidemic threatens. M. Babès uses a large bottle holding from 1 to 4 litres, the internal surface of which is coated with a film of gelose. Twenty-four hours after insemination the bottle contains up to a litre of vaccine.

Comparative Statistics of Tuberculosis in the Precincts of Paris.

The Committee on Tuberculosis of the Conseil Général de la Seine has published comparative statistics of the mortality due to tuberculosis in 1896 and 1911 in the precincts of Paris. A comparison of deaths from tuberculosis with the general death-rate gives the following results. In the arrondissement of St. Denis in 1896 there were 1565 deaths due to tuberculosis out of a total of 10,615, or 14·7 per cent., as against 2939 from tuberculosis in 1911 out of a total of 15,558, or 18·9 per cent. In that of Sceaux in 1896 the tuberculosis deaths were 962 out of a total of 7850, or 12·33 per cent., as against tuberculosis 1692 deaths, out of 11,608, or 14·58 per cent., in 1911. The proportion of deaths from tuberculosis relatively to the number of inhabitants is as follows: St. Denis, in 1896, 332·4 deaths from tuberculosis per 100,000 inhabitants, the proportion rising in 1911 to 397·9. In Sceaux, in 1896, 297 deaths from tuberculosis per 100,000 inhabitants, the proportion rising in 1911 to 330·2. These figures show so rapid an increase of this plague in the precincts of Paris as to call for the vigorous promotion of an anti-tuberculosis campaign. There are unfortunately social causes whose influence remains inevitable, of which the chief is the influx into the capital of an increasing number of young people of both sexes who do not tolerate well the change of environment. This population, which comes especially from the poorer classes, herds together in overcrowded lodgings without the restraint of family ties, and becomes a speedy prey to alcoholism.

Jan. 27th.

SOUTH AFRICA.

The Position of the Nursing Profession in South Africa.

THE registration and examination of nurses and midwives in South Africa are at present in the hands of the Medical Councils of the different provinces constituting the Union. In the case of applicants holding certificates from other authorities registration is granted if the certificates are considered satisfactory. The requirements of the different councils in regard to local training vary considerably. In some cases the length of training extends from three to four years, according to the institution selected; in other cases certain institutions only are recognised, while institutions recognised by one council are not always recognised by another. The character of the examinations is uneven, and the tests do not adequately appraise the candidate's fitness for certification, much theoretical and but little practical knowledge of nursing being required. The general opinion by those in a position to judge is that the whole system requires thorough revision. This also seems to be the view of Government inspectors. In regard to nurses from overseas, certificates from other than large British hospitals are looked upon with suspicion as a rule, and recently several nurses, who have been trained in large continental hospitals, have been told that they must sit for examination if they desired registration. The value of trained nurses is being constantly recognised, and their position is improving year by year, the supply being considerably less than the demand. All the State-aided hospitals, other than those institutions which are able to undertake the training of probationers, have to employ temporarily numbers of unregistered nurses. It is probable that before long an attempt will be made to organise the nursing profession, which at present is without any recognised body to look after its interests, and already[1] a local nursing journal has been started. It is not unlikely that the Government may be induced to bring in legislation in the near future for the purpose of establishing a central nurses' and midwives' board in place of the four Medical Councils which have outlived their usefulness as registering authorities for nurses. The law, too, requires alteration in other respects, for, except perhaps in the matter of securing hospital appointments, it is no advantage for a nurse or midwife to be registered in South Africa. A number of locally trained nurses and the majority from overseas do not register, and find no difficulty in securing remunerative employment.

Dec. 28th, 1913.

[1] THE LANCET, Jan. 10th, 1914, p. 153.

A CENTENARIAN.—Miss Ritso, of Bath, celebrated her 102nd birthday on Jan. 26th. Her great-uncle, Dr. Grimm, was Court Physician to the Duke of Gotha. Her father, mother, and sister each lived to be nearly 100.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. A. Hirschl, assistant in the Vienna University Clinic for Mental and Nervous Diseases.—Dr. Wilhelm Bernoulli, of Basle, an eminent botanist, aged 75.—Dr. L. Kessler, extraordinary professor of gynæcology in the University of Iurieff (Dorpat).—Dr. P. Muselier, formerly physician to the Paris hospitals.—Dr. Giuseppe Cesari, professor of materia medica in the Modena Medical School.—Dr. G. Henry Torney, Director-General of the Medical Service of the United States Army.

A CORONER WHO HAS HELD 15,000 INQUESTS.—Mr. S. Brighouse, of Ormskirk, has just completed 30 years of service as coroner for the South-West Lancashire district, which includes Southport, Bootle, St. Helens, Widnes, and 77 other townships. Mr. Brighouse was appointed on Jan. 16th, 1884. During these 30 years he has conducted nearly 15,000 inquests, entailing over 180,000 miles' travelling by road, car, and rail. In the first year of his coronership nearly 500 inquests were conducted in public-houses; by 1913 the number had fallen to 80. Probably the most notable of the inquests conducted by him was that in connexion with the Maybrick case, which lasted several days and cost the country £265, the depositions extending to over 300 folios. The longest inquest held was in connexion with the Maypole disaster, which opened in August, 1908, and concluded in July, 1909.

Correspondence.

"Audi alteram partem."

TUBERCULOSIS DISPENSARIES IN LONDON.

To the Editor of THE LANCET.

SIR,—Recent occurrences have again brought before the profession the question of the public treatment of tuberculosis in the London area. After two years of consideration, perhaps too brief a period, a scheme has been evolved which represents approximately, if not the decision of the Local Government Board, at least a form of authoritative suggestion. It would appear from the wording of the document in which this is embodied that its inspiration is attributable in a considerable degree to the views expressed at a meeting of representatives of the twelve principal hospitals of the metropolis on Oct. 23rd, 1913.

The views of the public health departments have likewise received a full measure of attention. Proposals drawn up by the London County Council in a somewhat simplified form are practically identical in character. Local administration, including the immediate control of finance, is entrusted to the borough councils. General details of management, such as the keeping of statistical and other records, hardly call for comment at the present stage, but there are two principal considerations to which attention may profitably be directed. One is the relation of general hospitals to the dispensary system, the other the connexion with it of the public health department. At the meeting of hospital representatives decisions were arrived at on three points. 1. That it is important in the interest of the public and of medical education that general hospitals which are also medical schools should be utilised to the fullest extent in the treatment of tuberculosis in the London area. 2. That any local institution carrying out dispensary treatment shall refer special cases for consultative purposes to appointed hospitals. The hospitals named are: St. Bartholomew's, London Hospital, Guy's, St. Thomas's, University College, Charing Cross, St. George's, Westminster, King's College, St. Mary's, Middlesex, and the Royal Free Hospital. 3. That in addition to being recognised for consultative purposes, such institutions should, where they desire, also act as tuberculosis dispensaries, and in respect of such work should conform to the general conditions regulating dispensary treatment elsewhere. These conditions have been more or less completely incorporated both in the arrangements proposed by the Local Government Board and in those of the London County Council, the Board recommending that where a hospital is conveniently situated arrangements should be made enabling it to act as a local tuberculosis dispensary, while the County Council is prepared to deny approval to a dispensary which is not affiliated to a hospital to which special cases shall be referred for diagnosis or treatment. As regards the medical officer of health, while he continues doubtless to exercise the preventive and statistical duties of his own department as heretofore, it is provided by the Local Government Board that in the case of dispensaries established by the borough councils the medical officers of these dispensaries shall be attached to the staff of the public health department, and though they shall be independent in clinical matters they shall act under the administrative control of the medical officer of health, and further that visits from voluntary dispensaries shall be made under his direction. These restrictions apparently do not apply in the case of hospitals doing dispensary work. In addition there is provision made in the plan of the County Council for home visitation by the medical officer or his staff as well as by the tuberculosis officer in charge of the dispensary. It is thus apparent that the independence in clinical matters allowed to the medical officers of these institutions is of a strictly limited character.

Such in substance is the system approved at the present time by the Local Government Board and the Council for the County of London. That it is a genuine attempt to deal effectively with the treatment of tuberculosis there is no reason to doubt. It would be gratifying to find that it showed an equally clear perception of the bearings of the problem under consideration, and of the values and the relations of the forces available to deal with it and an equal judgment in coördinating them. Unfortunately this is not the case, for the proposed arrangement is lacking in some of the main factors of success. It accepts without reserve the propositions that have been set forth by the hospital representatives, which are at best of a one-sided character, and it is not too much to say that from this point of view the case has been overstated.

Recourse to hospitals is undoubtedly advantageous on many occasions, both for consultative and therapeutic purposes. This is particularly true in regard to tuberculous disease presenting difficulty or complexity, surgical tuberculosis, and advanced cases requiring treatment in bed. It applies probably more forcibly to specialised than to general hospitals, which are in comparison with institutions of the former class not much frequented by the tuberculous except for operative procedure. It must also be recognised that the greater hospitals have educational requirements. They must have the means of supplementing theoretical study by clinical observation. All this may be freely admitted, but it does not necessarily follow that they are best adapted to conduct tuberculosis dispensaries as part of their system.

There are conveniences, notably that of proximity to the homes of patients, which should be better observed by the establishment of separate dispensaries in suitable situations in each borough area. A further and important consideration is the certain stimulus which institutions so placed would give to the efficiency of treatment carried out by local practitioners, on whose alertness and proficiency the extirpation, if that be possible, of tuberculosis must in the long run chiefly depend. It is improbable that the hospital dispensary would prove equally useful in this respect. On the other hand, there should be no difficulty in providing the hospitals with those facilities for clinical teaching which they require, and it would be easy to associate the tuberculosis dispensary extramurally with the tuition of the medical school. This is done elsewhere in connexion with general medical treatment.

The position of the medical officer of health in the proposed system is even more open to criticism.

He represents that section of the medical profession which has devoted itself to purely sanitary work. With clinical treatment, even in the preventive stage, he has no natural or proper concern, and, as a rule, but slight acquaintance. In view of this fact the statement that he and his staff will take part in home visitation requires to be explained. It can rightly apply only to the regulation of domestic surroundings. The examination of suspects and contacts belongs to the practitioner. There is the same sense of incompatibility when we find him empowered, apparently as a matter of routine, to direct visitation by the medical officers of the dispensary, who would presumably be competent men, while the clinical staff appears to be regarded merely as an appendage of the public health department. In truth the selection of the medical officer of health as the administrative head is in itself an anomalous proceeding which it is difficult to associate with normal ideas of proportion. All this executive elaboration makes for overlapping, confusion, misunderstanding, and friction. Smooth and efficient working would be better provided for by making the departments of treatment and sanitation independent while supplemental to each other, and by giving their officials distinct representation with a common responsibility to the local authority as the governing body.

There is one important omission in the scheme under examination—namely, the general practitioner. This is a serious error which, if not amended, cannot fail to prejudice the successful attainment of the objects aimed at. It can hardly be said that he has been definitely excluded. Except in so far as voluntary dispensaries with which he may be connected come under notice, he has been simply ignored. Yet he is the one man who in illness comes nearest with assistance, and who is and always will continue to be most relied upon by rich and poor alike. It is scarcely too much to say that if he remains true to his professional duty, which is probable, the future of medicine is in his hands. The significance of such a mistake as this is the more apparent when we reflect that the practitioner of the present day is a materially different type from his predecessor of the last generation. He has exact knowledge and scientific training, which he understands how to apply in practice. He also recognises in the treatment of tuberculosis, whether in the dispensary or in the home, an opportunity that falls legitimately within his sphere of action. His coöperation is under the circumstances essential to the success of any project for the treatment of this disease, and his abstention means its failure. To whatever misconception or default in counsel his omission is to be attributed, it can only be regarded as one proof the more that this scheme, in which he is not found, requires reconsideration.

I would briefly sum up the foregoing observations in these three propositions:—

1. That the tuberculosis dispensaries, while working in harmony with available hospitals, should be distinct from, not attached to them.

2. That public health departments should coöperate with, but not control, the dispensaries, the local authorities (borough councils), on which both are represented, being the governing bodies under the Local Government Board.

3. That duly qualified general practitioners should be eligible for all clinical offices connected with the dispensaries.

I am, Sir, yours faithfully,

Islington, N., Jan. 27th, 1914. B. G. MORISON.

THE USE OF VACCINES IN PNEUMONIA.

To the Editor of THE LANCET.

SIR,—The prevalence of pneumonia at the present time makes Sir R. Douglas Powell's letter in THE LANCET of Jan. 24th of timely interest. It is to be hoped that those who have used vaccines in this disease will respond to his appeal for an expression of opinion. His own practice, of suggesting that a vaccine should be prepared from the sputum early in the attack, to be used in the event of continued severity or relapse of symptoms, and in some cases of slow resolution, probably represents that of most physicians. Vaccines are used as a last resort in cases doing badly.

My own practice is to regard every case as a possibly fatal one and to give a vaccine as early as possible after the onset of symptoms. Little immediate good can be expected when consolidation is present, for antibodies cannot penetrate into the solid airless lung. However, since all the lung is not in the same stage and parts may be in the condition antecedent to consolidation, good sometimes results. In the early stages of the disease before consolidation we are dealing with a septicæmia, and a vaccine then gives striking results. In a few cases I have been fortunate enough to give a vaccine within 24 hours of the initial rigor, in one case eight hours after the rigor. In these cases there has been an immediate response, and the after-course of the disease was profoundly modified. Usually the temperature fell to normal on the second or third day of the disease. In the case injected eight hours after the onset there was no further rise above 99·8° F., although consolidation occurred. Generally after the first fall the temperature rose again to a moderate height, and finally fell to normal after a second dose of vaccine. A recent case may be given as an illustration. A man, aged 46, had a severe rigor at 7 P.M. on Jan. 10th and his temperature rose to 105·2°. He was seen by me in consultation exactly 24 hours afterwards. His temperature then was 103·6°, respirations 32, pulse 116, rusty sputum, soft mitral systolic murmur. The only physical sign in the lungs was characteristic subdued breathing at both bases. His general condition was flabby, and we regarded him as a distinctly bad subject for pneumonia. A dose of 30 millions stock vaccine was given at once. At 6 o'clock the next morning the temperature was 100°, pulse 96, respirations 24. On Jan. 13th, 36 hours after the injection, the temperature was 98°, pulse 72, respirations 24. On the 14th the temperature rose again to 103°, pulse 108, respirations 40. Bronchial breathing was now present at both bases. A second dose of an autogenous vaccine containing 50 millions pneumococci and 50 millions micrococcus catarrhalis was now given. The temperature fell to normal next day and remained constantly normal. He was sent away to the seaside exactly 14 days after the initial rigor.

So striking have been the results when vaccine was injected early that I would urge the adoption of this practice. The amount of consolidation is probably determined by the events of the first few hours of toxic invasion, yet a consultant rarely sees a patient at this stage when so much could be done. It may be argued that if cases are injected early there is no proof that the cases really had acute pneumonia. But the sharp rigor, dry hot skin, rusty sputum, pulse and respiration ratio, and general appearance of the

patients could scarcely be due to any other disease. It is an interesting point that in cases injected early consolidation may develop, although the temperature and pulse-rate are little above normal and the patients do not feel ill. The general symptoms improve out of proportion to the local disease. But it is unnecessary to wait for consolidation before making a diagnosis and giving a vaccine any more than one waits for the report on the throat swab before giving diphtheritic antitoxin.

If a vaccine is given at the commencement of the disease it must be a stock one. Owing to differences in strain it is advised that this should be a polyvalent vaccine. But the difference between strains is mainly one of virulence, and my own practice is to use a vaccine from a culture of high virulence. For some time I have been using one derived from a rapidly fatal case of pneumococcic meningitis. When possible I make an autogenous vaccine for each case, but I am not convinced that such a vaccine has any advantage over a stock vaccine from a virulent culture except when the infection is mixed. Many recent cases have shown the micrococcus catarrhalis, but even then one can assume that the pneumococcus is the predominant organism.

Unsuccessful results have been obtained by the use of inadequate doses. Doses of 5 to 10 millions are quite useless. My own doses have ranged from 25 to 50 millions, and with increasing experience I find myself inclining to the larger dose. I have not used more than 50 millions as an initial dose, but I now think that this dose may be too small to abort the disease, and that a still larger dose would give better results. Sir Almroth Wright has found small doses frequently repeated absolutely ineffective, and suggests that a dose of 500 millions might be tentatively employed at the outset of a pneumonia attack. The fear of a negative reaction has prevented many from using vaccines in pneumonia. I have never detected clinically any signs of a negative reaction after the doses I have used. Sir Almroth Wright, in connexion with his prophylactic inoculations, gives reasons for thinking that this stage may make default in the uninfected person and in the early stages of infection with doses of less than 1000 millions of a pneumococcic vaccine, which is with difficulty broken down in the body. If this fear can be abolished the way will be open for a more extensive use of vaccines in acute diseases.

Probably no physician has had a sufficient number of cases to furnish satisfactory statistical evidence, and such evidence as can be brought forward may fail to convince others who have not seen the cases which furnish it. But individual expressions of opinion may, I hope, encourage others to use vaccines promptly in this fatal disease.

I am, Sir, yours faithfully,

Birmingham, Jan. 25th, 1914. WILLIAM H. WYNN.

THE STERILISATION OF MILK AND ALLIED QUESTIONS.

To the Editor of THE LANCET.

SIR,—Dr. Eric Pritchard's letter in your last issue should suffice to dispose of Dr. Ralph Vincent's statement as to the "appalling effects" of feeding children on cooked milk; and I should not ask space for a few lines but for the reason that it occurs to me that your readers may be interested in an extract from a letter sent to me on August 6th, 1906, by the late Professor Budin—the founder (in 1892) of the present-day Consultations de Nourrissons, of which I believe there are at least 15 in Paris at the present time. Budin was a great clinician and a man who weighed his words most carefully; and his experience in the matter under dispute is of exceptional value, because at his Consultations children were kept under observation from birth until the age of 2. He writes that he made it his great concern always to give a carefully considered ("nettement déterminée") quantity of milk in order to avoid trouble; and writing after 15 years' experience he says, "Jusqu'ici je n'ai pas observé *un seul cas* de scorbut infantile." He maintains, with Variot and others, that it is the faulty amount and modification of the milk that give rise to such infant maladies, and not the cooking; and Budin found (as I have found upon inquiry in several cases brought to my notice) that in cases of alleged ill-effects from the use of cooked milk there have always been other factors to be reckoned with, which were, to say the least, quite as likely to have been responsible for the disturbance complained of. That the cooking of the general, 4*d*. per quart, milk-supply is a certain means of reducing the sum of sickness and mortality among the artificially fed infant population generally is conceded by all those who have tested the fact on a sufficient scale, although no one disputes that cooked milk, like breast milk, may prove unsuitable to occasional infants.

I am, Sir, yours faithfully,

HENRY KENWOOD.

University College, London, W.C., Jan. 27th, 1914.

To the Editor of THE LANCET.

SIR,—The letters by Dr. Ralph Vincent and Dr. Eric Pritchard in your last two numbers represent two opposing views on a question which is of extreme importance to all who are concerned with the feeding of infants. The paramount importance of breast-feeding is accepted by all, but, in spite of every effort to encourage breast-feeding, we are faced with the fact that under present conditions of civilisation there must always be a fairly large proportion of artificial feeding. Dr. Janet Lane-Claypon has shown in her report to the Local Government Board on the biological properties of milk, that breast-feeding, even if it is only for the first few weeks of life, is of extreme importance because it supplies the infant with those bodies which can only be secreted by, and absorbed from, an animal of the same species; she also says that the "biological substances" in raw cow's milk are not absorbed in the infant's alimentary canal but are destroyed there. If this is true, then one of the main contentions for the use of raw cow's milk is done away with. I wish to call the attention of all who are interested in this controversy to an important piece of work which they should read before they express an opinion.

If we consider, as most of us do, that raw milk is better for the infant than heated milk, we must add two important qualifications to our opinion: (1) That milk as delivered to the mother and given to the child shall be reasonably free from dangerous bacteria and their products, and (2) that the infant's digestion shall be able to cope with raw milk. For a milk to be reasonably free from bacteria, it should come from a herd free from tuberculosis, it should be efficiently cooled immediately after milking, and it should be kept

cool until used for feeding. It is doubtful whether these conditions obtain at any but the model farms, and it is more than doubtful whether any of these model farms could supply milk at a price to place it within reach of the poorer classes of our large towns and still be worked at a profit. To those working in town areas this question of price is an all-important one. The second qualification is not so important, but there is no doubt that to many babies with impaired digestive powers heated milk is more digestible than raw milk, and at the same time that many infants who have to be fed artificially at an early age have from one reason or another impaired digestive powers when weaned.

Two other questions must also be answered: (1) Is there any danger of a baby contracting tuberculosis if it receives a certain number of tubercle bacilli of the bovine type from the cow's milk it takes? and (2) If there is such danger, is it better to use cow's milk heated at home by the mother or to use dried milk which has been sterilised soon after milking? The first question must be answered in the affirmative, and most emphatically so. The recent researches of Dr. Mitchell on cervical adenitis show that 90 per cent. of 72 consecutive cases were due to the bovine type of bacillus, whilst clinical experience in areas where tuberculosis is common leads one inevitably to the conclusion that tuberculous milk is responsible for a certain amount of the tuberculosis of early life. The fact that the amount of tuberculosis amongst cattle and amongst children varies in different localities may account for differences of opinion on this point.

If we think it advisable to avoid the danger of infection by bovine tuberculosis from raw milk we are forced to the conclusion that it is better to use heated milk. "Scalding" milk—a process that is similar to pasteurisation—does not apparently injure any of the chemical substances necessary to the health of the child. Therefore, if we consider that these chemical substances are necessary for the health of the child we should recommend scalding or pasteurisation of milk. Probably if the supply is reasonably pure this is the best thing to do. But if the milk is of doubtful age and cleanliness it is another matter, and we must consider the value of a full-cream dried milk. At the Manchester Schools for Mothers, at the Children's Hospital, and elsewhere I have watched a very large number of babies who have been fed on either scalded cow's milk or sterilised cow's milk or full-cream dried milk, and although I began with a prejudice against dried milk and expected to find a large proportion of rickets or scurvy amongst the babies so fed, I am bound to say that as a result of careful inquiry I am now of the opinion that dried milk gives better results than sterilised cow's milk, and I have no evidence that there is special advantage in using scalded milk. The question of the expense of dried milk as compared to scalded need not be discussed here, although it is, of course, of great practical importance. Further, at the Schools for Mothers it appears that not only are babies fed on dried milk less likely to develop diarrhœa in the summer than are babies fed on heated cow's milk, but also, what is more important, they are less liable to suffer from severe attacks of this disease. The fault lies in the present supply of raw milk, and it is bound to take time to overcome inertia and prejudice against new methods, to instal efficient apparatus, and to educate mothers up to the requisite standard. Most excellent work is being done by many public authorities to these ends, and any controversy that helps to further their efforts and to bring fresh evidence to light is of the greatest value.

I am, Sir, yours faithfully,

Manchester, Jan. 26th, 1914. C. PAGET LAPAGE.

TREATMENT OF GASTRIC AND DUODENAL PERFORATION.

To the Editor of THE LANCET.

SIR,—In considering the treatment advocated by Mr. Edred Corner in his interesting paper published in THE LANCET of Jan. 10th, it is, I believe, very important to make a clear distinction between gastric and duodenal perforations.

Mr. Corner refers to two successfully treated gastric perforations, but implies that the treatment adopted in those cases is also applicable to perforated duodenal ulcers. This is, I think, a mistake; the possible results are quite different in the two groups of cases. In fact, the distinction is vital; a duodenal fistula practically never closes spontaneously, and the loss of the secretions which flow into the duodenum involves rapid death from inanition, while on the other hand a gastric fistula when not adherent to the abdominal wall tends to close rapidly, and the temporary escape of the gastric secretions on to the surface of the body, though possibly in some cases annoying and troublesome, is not of vital importance.

In certain cases during the past seven years I have from time to time employed a method somewhat similar to that which Mr. Corner recommends. The total number of gastric and duodenal perforations on which operation has been done is 35 with 8 deaths. This number includes 16 gastric cases with 3 deaths. Of the 16 gastric perforations, 10 were closed by suture and 6 were not sutured. In the 10 sutured cases there were 2 deaths; in the 6 unsutured cases there was 1 death. There is therefore a slight balance in favour of the unsutured cases. With regard to morbidity there is little to choose between the two groups. Subphrenic abscess developed in one of the unsutured cases and in two of the sutured cases. All three recovered after secondary transthoracic operation and long illnesses. In none of the unsutured cases was there any trouble from discharge of the gastric secretions; in some we could not be sure that there was any escape; in two only did evident leakage continue into the second week; in none was wound healing unduly prolonged.

I think it is important to point out, however, that the above applies only to one group of gastric ulcers—viz., those situated very high up on or close to the lesser curvature; all other gastric perforations were closely sutured. It is to be noted that one at least of the cases mentioned by Mr. Corner belongs to this group. In the earlier cases I anchored a drainage-tube, with a suture of No. 1 unchromicised catgut, close to the site of perforation and packed gauze loosely around the tube. In later cases I have eliminated the gauze altogether and simply used the tube, with no difference in the results and with avoidance of the trouble associated with removal of the gauze.

With regard to duodenal cases the situation is quite different; in 19 cases (duodenal and pyloric) there have been five deaths; in two cases the perforation was not closed and both patients died. One of these, a lad aged 18 years, was sent in three weeks after the onset of the illness with an abscess involving the whole right side of the abdomen from

chest to thigh and pointing in the right iliac fossa. The abscess was incised, and pus, sloughs, bile, and curdled milk escaped; the cavity was found to extend far upwards. A second drainage incision was made in the loin; more bile-stained fluid and milk curd escaped; the source of leakage could not be found; the cavity was packed. The patient lived for some weeks, the fistula persisting and discharging intermittently. Death ultimately occurred from inanition. Post mortem the fistula was found to communicate with the second part of the duodenum.

The second case was that of a stout elderly man who had perforated eight hours previously. The perforation was found down in the second portion of the duodenum, and was brought within reach by incising and stripping up the peritoneum to the outer side of the viscus. The whole anterior wall of the second part of the duodenum was a thick, hard, œdematous plaque. The first linen suture cut out; the second did likewise. Two sutures of thick catgut were then passed through the whole thickness of the duodenal wall from side to side of the perforation and tied gently, approximating the margins of the opening simply edge to edge. A large drainage-tube was placed with its end in contact with the perforation and packed around with gauze. A gastro-enterostomy was not done because it appeared that owing to the situation of the lesion—i.e., opposite to or even below the level of the orifice of the bile and pancreatic ducts—an anastomosis would be likely to increase rather than diminish the risk of leakage. The patient rallied well and remained well until the third day, when duodenal fluids began to escape from the wound; the quantity of discharge—bile and pancreatic juice—steadily increased, till it became enormous. There were no symptoms of peritonitis. The patient died from inanition on the fifth day after operation.

I feel sure that any method (including omental plugging) which involves the possibility of a fistula, though sometimes useful in certain perforations on the gastric side of the pyloric sphincter, is very dangerous when employed in the treatment of a corresponding duodenal lesion.

I am, Sir, yours faithfully,

Middlesbrough, Jan. 25th, 1914. WM. S. DICKIE.

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—By the death of its revered President, Sir David Gill, the Research Defence Society has suffered a very heavy loss. His death has come at the time when our society is just beginning the sixth year of its work, and we ask you kindly to publish this short note on the result of the past five years of work. We are of opinion that our society has helped to bring about a much better understanding of experiments on animals in this country. There is less of ignorance, prejudice, and ill-will; less readiness to accept without inquiry the charges made against this method of research; less doubt of its great value in physiology and pathology. The public is beginning to see that experiments on animals are useful in the maintenance of national health and efficiency, in the protection of men on foreign service, in the safeguarding of workers at dangerous trades, and in the immunising of live-stock against infectious diseases. It has come home to thoughtful people that diphtheria antitoxin, thyroid extract, salvarsan, amyl nitrite, and many other drugs, and many important facts in physiology, and the protective treatment against rabies, cholera, plague, Mediterranean fever, typhoid fever, tetanus, anthrax, and pleuro-pneumonia—to name these instances and no more—were discovered by the help of experiments on animals.

Of course, our society must not take more than its share of the credit for this advance of public opinion. Much of it is due to the labours of the Royal Commission, to the influence of the resolution passed last year by the International Medical Congress, and to the reverses sustained by our opponents. Moreover, the discoveries made of late years by medical research speak for themselves. Still, there is always need of interpreters of science to explain in simple words the advantages given to us by men of science for the saving or safeguarding not only of human lives but of animal lives. This work of popular interpreting is the especial duty of the Research Defence Society, and we look forward to many years of continued usefulness.

We remain, your obedient servants,

CROMER, Vice-President.
F. M. SANDWITH, Hon. Treasurer.
S. PAGET, Hon. Secretary.

21, Ladbroke-square, London, W., Jan. 27th, 1914.

THE DUCTLESS GLANDS.

To the Editor of THE LANCET.

SIR,—I have been very interested to read your section on Obstetrics and Gynæcology in the "Annus Medicus 1913" contained in your issue of Dec. 27th last. With the views put forward in your discussion of Dr. W. Blair Bell's lectures on the ductless glands and pelvic organs I am in entire accordance. It is indeed true that our knowledge of this subject as regards actual facts is very small, and it is also true as you state that "at the present time there is a widespread tendency to attribute all kinds of varying errors of metabolism to disturbances of one or other of the ductless glands when practically nothing is known with any certainty." You point out that Dr. Bell finds fault with Biedl because in his book there is no attempt to link up the connexions that exist between the ductless glands in regard to the specialised functions, and you express an opinion, with which I cordially agree, that Biedl has been right in refraining up to the present time from any such attempt. The facts at our disposal have so far not been sufficient to warrant us in drawing any very definite conclusions as to the interactions between the various organs furnishing an internal secretion.

Perhaps I may be allowed to point out that reviewers of my own book on internal secretion have in a similar manner complained that I have not dealt fully and definitely with this aspect of the subject. Thus, the *Universal Medical Record* says: "The broad conception of play and interplay between the various secretions, with the possibly balancing function of some of them, is nowhere given free expression." The reason for my hesitation to give "free expression" to this branch of the subject, as also presumably Biedl's reason, is admirably indicated in your own article, and amounts to a declaration that so far we have not had enough positive information from which to draw any general conclusions. I hope, however, in a future edition to make an attempt to correlate our knowledge on this branch of the subject, and any definite information which can be culled from

the writings of Dr. Bell and other clinicians will be welcomed and incorporated.

I am, Sir, yours faithfully,

SWALE VINCENT.

University of Manitoba, Winnipeg, Jan. 6th, 1914.

DOSAGE AND THE METRIC SYSTEM.

To the Editor of THE LANCET.

SIR,—I have read with very much interest Dr. C. O. Hawthorne's able paper on Dosage in THE LANCET of Jan. 24th. With reference to his advocacy of the use of the metric system in dosage, I would inform both him and your readers that I have received an official notification from the General Medical Council that all measures in the next edition of the Pharmacopœia will be in the metric system, including those referring to dosage, but that in order to facilitate the use of the Pharmacopœia by medical men dosage will be given alternatively in the Imperial system also; the latter will be the only use of the Imperial weights and measures throughout the work. This procedure, which appears to meet Dr. Hawthorne's suggestions, has received in advance the approval of the pharmacists, and this association has taken the liberty of suggesting a similar procedure on the part of all those who are responsible for the preparation of unofficial pharmacopœias.

I am, Sir, yours faithfully,

G. E. M. JOHNSON,
Secretary, the Decimal Association.

Finsbury-court, Finsbury-pavement, E.C., Jan. 28th, 1914.

A NATIONAL MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Though agreeing that the possibility for a patient to be attended by the doctor of his or her choice is of considerable value, I think it is putting the case too strongly to maintain that "the free choice of a doctor is the matter upon which everything turns." If it is of such importance, why is it that in the past the great majority of the population have been deprived of that right without protest? Why is it that even now it is denied to that most unfortunate section of society, the recipients of Poor-law relief? Their destitution, which brings them under the Poor-law, is generally the result of sickness, and it is of great importance to restore these patients to health as quickly as possible and so to make them once again self-supporting. Yet they are chained to a doctor selected for them by the guardians, and no insistent demand has been made by the profession to extend to them the right of "free choice," which just now is said to be of such great therapeutic value. The public has not been loud in its demand for this right, and the question arises whether the doctors' demand is purely altruistic and for their patients' good, or whether at the bottom there is not a feeling on the part of each individual doctor that he stands to gain.

You state that at the recent conference of Friendly Societies a proposal in favour of a State Medical Service was rejected by a substantial majority. This is true; but it was rejected in favour of the Friendly Societies' control of medical benefits, which would abolish the right of "free choice." The Scottish Clerks' Association proposed a resolution that steps should be taken to transfer the administration of medical benefits to the Approved Societies under the Insurance Act. As a direct amendment to this, Mr. T. W. Huntley, of Newcastle-on-Tyne, moved a resolution in favour of a State Medical Service, which was afterwards altered to "a full-time salaried medical service." This was lost by 89 to 16, and the original resolution was carried. A resolution standing in the name of Mr. George Cronin, of the Manchester Union, in favour of a State Service was then put and lost by 65 to 22. During the discussion no one pleaded for the present panel system with its free choice of doctor. The fight was for control by the Friendly Societies *versus* a State Medical Service, and of the two alternatives the great majority were in favour of the former. And the fight is not over; the Friendly Societies mean to gain control of the medical benefits and of the doctors if they possibly can. From the point of view of the medical profession there is nothing to be said in favour of the control of medical benefits by the Friendly Societies, but there would be many advantages in a State Medical Service, and as the trend of events is rapidly leading that way it would be wiser for the profession itself to prepare a scheme which would not be unacceptable to its members rather than allow a scheme prepared by Government lay officials to be thrust upon it. It would be possible under a State Medical Service to extend the possibilities of "free choice" to practically the whole population, and at the same time to do away with certain evils which are inherent to the necessity of catering for patients.

I am, Sir, yours faithfully,

CHARLES A. PARKER.

Upper Wimpole-street, W., Jan. 26th, 1914.

THE NATIONAL INSURANCE ACT: THE SURPLUS FUNDS.

To the Editor of THE LANCET.

SIR,—In your issue of Jan. 10th, p. 149, you made some observations on a correspondence which has taken place with regard to the funds for medical remuneration retained by the London Insurance Committee. I should like to call attention to a point which has not been given due prominence in this correspondence.

The new agreements were signed, not in April, but before March 22nd, 1913, at which date we were still under the impression that an allocation of the residue would be made between April 1st and 14th, and Circular M.B. 9 of March 18th, which accompanied the agreements and directed their return before March 22nd, contains a reference to the coming allocation. It was not until the early days of April that we were informed that the allocation was postponed.

No medical man who is not in the habit of signing in blind faith unread documents would have signed that agreement accepting remuneration according to the schedule except on the understanding that an allocation would have been made by April 14th. The failure to make the allocation is no reason for repudiating the agreements; the worst that can be alleged against the committee is that their clerk was culpably optimistic as to the ability of his staff to cope with their enormous task, seeing that by the end of October they had only been able to trace about 40 per cent. of the insured who had chosen their medical attendants. But I think it is a valid reason for excluding from the operation of the schedule the remuneration due from those entitled

to benefit before April 14th, 1913, who should have been allocated at that date. This view of the case is supported by the statement on p. 7 of that delightful pamphlet addressed to the profession by the Commissioners in December, 1912, which says that this method of calculating the remuneration will only apply "when the system is in full working." This pamphlet may not have the legal force of the Regulations, but at any rate shows the intentions of the Commissioners. Again, Circular 29 IC (*vide* THE LANCET, Oct. 4th, 1913, p. 1032) recommending a distribution of unallotted persons quarter by quarter would also show that the Commissioners realised that remuneration according to the schedule would only be equitable provided there were no accumulated funds from the preceding quarters.

I certainly took Mr. Masterman's statement in the House of Commons on July 14th last to refer to this particular difficulty, and regarded it as an assurance that we should receive payment at the rate of 7*s.* a year for each of our acceptances during the year for whom 7*s.* was payable, though doubtless it also had reference to deductions for the Central Fund, about which the Commissioners were discreetly silent in the pamphlet of December, 1912. The Commissioners have made arrangements for us to receive full remuneration for the coming year, substituting the acquisition of powers of telepathy by the Panel Committee in place of the hard work previously demanded of the staff of the Insurance Committee, and I have no doubt will see that the remuneration for the past year is equitably divided amongst us.

Individual actions against the committee should be a last resort, but if all other means fail it is only fair that, if the committee were liable to be surcharged if they distributed our remuneration, they should also be liable as a surcharge to recompense any medical man who can prove that he has suffered loss through their neglect to make adequate provision for securing an allocation of the residue in April.

I am, Sir, yours faithfully,

Wells-street, W., Jan. 19th, 1914. J. M. TWENTYMAN.

To the Editor of THE LANCET.

SIR,—Your legal correspondent says, in answer to my suggestion that a part at any rate of the unallotted insurance funds should be held in reserve for payment of doctors who, having gone to the aid of a midwife, are unable to get their fees from very poor patients, that "this hardly seems possible in view of the fact that the National Insurance Act, 1913, repeals the portion of Section 18 of the original Act, which permitted the fee of the medical practitioner in the circumstances indicated to be 'recoverable as part of the maternity benefit.'"

This repeal was made at the instance of the Midwives Institute, backed up by 55 affiliated associations of midwives in different parts of the country, for the wording of the old clause made it appear as if the societies would be responsible for the "recovery" of the doctor's fee as part of the maternity benefit, resulting in the societies holding back, in very many instances until the woman was up and about, the whole or part of the benefit from midwives' cases. This naturally prejudiced midwives and inflicted a great hardship on the poorest of insured persons, for whom the benefit was devised, and who most needed it during the puerperium. Your correspondent speaks of the *maternity benefit*, while I refer to unallotted funds for *medical benefit*—in my opinion two distinct things. These funds are no doubt still accumulating.

In considering my suggestion no one could say that the doctors would not be earning the money, which is a point raised by those who object to the whole unallotted funds being divided up amongst the doctors on the panel who have not been chosen by the insured people whose contributions are under consideration.

I am, Sir, yours faithfully,

JANET EWART ST. CLAIR,
Honorary Secretary, Fulham Association of Midwives.

Irene-road, S.W., Jan. 25th, 1914.

*** Miss St. Clair is no doubt right as to the effect of the repealed section in practice; and the Insurance Commissioners would relieve poor women in childbirth from a difficulty which often presses hardly upon them if they could see their way to fall in with her suggestion.—ED. L.

CHILLEY *v.* BRADFORD.

To the Editor of THE LANCET.

SIR,—In the above case the jury held that a nurse was negligent because, on giving a sedative, she did not remove from the bed, or otherwise protect the patient from, a covered indiarubber hot-water bag, which had been placed there about an hour and a half previously, and with which the patient subsequently before his operation burnt himself.

The sedative in question I understand to have consisted of 1/6 grain of morphia and 1/120 grain of atropine given hypodermically, but, of course, the finding of the jury includes all sedatives and affects the ordinary practice and routine of hospitals, private or otherwise, and raises a question of some importance to the medical profession, as in the above case, though I was not held to have been personally negligent, I was held responsible for the alleged negligence of my nurse.

I am, Sir, yours faithfully,

ANTHONY BRADFORD, M.D. Durh.

Henrietta-street, W., Jan. 24th, 1914.

*** The case is elsewhere dealt with.—ED. L.

A CATALOGUE OF SUFFERING.

To the Editor of THE LANCET.

SIR,—The system of election to the benefits of certain charities by a poll of subscribers has some obvious drawbacks as well as some advantages. One of the latter is the contact which it establishes between the subscribers and the nature of the work which is carried on by their money.

The Hospital for Incurables at Putney, for instance, sends out twice a year a voting paper, revealing an amount of human misery calculated to appal far more callous persons than those who subscribe to that splendid charity. Medically speaking, the column headed "Disease or Disability" is full of interest. At first sight it is surprising to find among the 192 candidates for the benefits of the society at the recent election not a single case diagnosed as malignant disease or as pulmonary tuberculosis. The explanation is probably to be found in the delay which necessarily ensues before a patient can be accepted; it always takes months, and generally years, to reach this much coveted haven of refuge, either as an in-patient or as a pensioner. Heart disease, again, is less prominent

than might be expected; seven cases alone appear, and in most of them some other condition is superadded. Aneurysm and Bright's disease are absent from the list altogether. Turning to the common causes of disability, "rheumatoid arthritis" is diagnosed in 58 cases, and chronic rheumatism, osteo-arthritis, and rheumatic gout account for another 14—an eloquent proof of our therapeutic helplessness for these intractable disorders. The other main group is that of the paralyses, which includes at least 73 cases, and probably more. The diagnoses of these disorders are so confused that in the majority of cases it is impossible to identify the extent and nature of the disease. In a few cases disseminated sclerosis, locomotor ataxia, myelitis, and paralysis agitans are specified; but "paralysis" is the only label attached to the bulk of the cases. The point is of minor importance, no doubt, because most subscribers do not trouble themselves about the complaint of the candidate they vote for; but it does occasionally happen that a medical man is asked to advise upon the relative disabilities attaching to various diseases.

There are further instances of unsatisfactory diagnosis on the list. "Internal trouble" appears two or three times; not, by the way, from a false delicacy, for "fibrous tumours" are specified in another case. "Debility after surgical operation" may be a euphemism for something more tangible, especially as the candidate is in her sixth year of application; but it is ambiguous and therefore objectionable. Graves's disease as a qualification for an incurables' charity may be a slight shock both to some physicians and to some surgeons. "Creeping paralysis" is a curious phrase in a list presumably derived from medical certificates, and "nervous debility" is equally vague and meaningless. Hæmophilia, myxœdema, and anæmia with enlarged spleen are some of the more uncommon and interesting diagnoses put forward. Doubtless the investigations of the society's officers exclude all except really urgent and deserving cases; but there is room for improvement in the system of setting forth the diagnosis and in the information thereby supplied to the electors.

I am, Sir, yours faithfully,

Jan. 17th, 1914. M.D. CANTAB.

THE NATIONAL INSURANCE ACT.

PENALTIES FOR ARREARS OF CONTRIBUTIONS.

AT a joint meeting of the Insurance Advisory Committees for England, Scotland, Wales, and Ireland draft regulations were considered fixing penalties for those falling into arrears with their contributions. The scheme proposed by the Commissioners was submitted by their actuary, Mr. A. W. Watson, and was unanimously approved. At the end of each contribution year—i.e., in June—each member's net arrears, if any, are to be ascertained; certain credit allowances being made, and he is to have the opportunity of paying them off before Oct. 1st. If on that date he is still behindhand the arrears then found will be his "penalty arrears" for the benefit year beginning Nov. 1st, and reductions of his benefit will follow upon a scale depending upon the number of payments which he has failed to make, and having as its extreme penalty the suspension of all benefits for one year. This is to take place when the penalty arrears exceed 26.

THE INSURANCE MEDICAL SERVICE IN LONDON.

It was noted at the meeting of the London Insurance Committee on Jan. 22nd that in the case of practitioners who have accepted service on the panel for a limited number of persons the clause will be omitted from the agreements which states that doctors will treat persons who have been assigned to them by the committee. It was decided to issue a circular letter to the medical profession emphasising this point, Dr. H. H. Mills (chairman of the Medical Benefit Subcommittee) remarking that a fear of having patients assigned to them had prevented many doctors from coming on the panel. There were about 1000 doctors whose practices were amongst the insured classes who had so far remained outside the Act, and it would be advantageous if a proportion of them could be attracted to the panel. On a motion by Dr. Mills, seconded by Dr. B. A. Richmond, the Medical Benefit Subcommittee was instructed to report as to the sufficiency of the arrangements for medical benefit in the various boroughs of London. Allusion was made to the criticisms of the panel service made by Sir John Collie, and noted in the last issue of THE LANCET (p. 280). Mr. F. Coysh (chairman of the General Purposes Subcommittee) observed that too much general abuse of the panel system had been indulged in upon the committee. The time had come for practical suggestions for its improvement. Some criticism was also passed upon waiting-room and lavatory accommodation at surgeries in East London. The committee passed a further resolution instructing a subcommittee to report as to the adoption of a scheme for the nursing of insured persons.

INSTITUTIONAL TREATMENT OF TUBERCULOSIS IN LONDON.

The cost of institutional treatment of tuberculosis in the metropolis appears, from a report presented to the London Insurance Committee on Jan. 22nd, to have been considerably increased by the decision of the London County Council to rely chiefly upon such temporary accommodation as the Metropolitan Asylums Board could provide. The rate per head works out at 40s. 2½*d*., against the more usual 30s elsewhere. Restricted accommodation prevents the reception of a sufficient number of cases to effect more economical working. The Insurance Committee, whilst fully appreciating the assistance of the Metropolitan Asylums Board (but for whose readiness in emergency institutional treatment would be almost a dead letter in London), has pointed out to the London County Council the unsatisfactory and expensive nature of the present temporary arrangements, and has urged the importance of securing permanent accommodation at an early date. At the same meeting of the Insurance Committee a resolution was passed expressing regret that the County Council had let slip the opportunity of acquiring for tuberculosis treatment the Mount Vernon Hospital, Hampstead, which has now been purchased by the Medical Research Committee formed under the Insurance Act. Mr. D. E. Warburg, a prominent member of the County Council, in defending the inaction of that body, made the announcement that in regard to the treatment of tuberculosis the Council adopts the same

attitude as in the case of medical treatment of school children—namely, of dependence upon voluntary organisations.

ASSOCIATION OF INSURANCE COMMITTEES IN WALES.

A conference of representatives of Insurance Committees in Wales and Monmouthshire was held recently at Shrewsbury for the purpose of forming an association of the Welsh Committees. Speeches expressing satisfaction at the working of the Act were made, and the following statements with regard to its operation were made among others. Weekly payments in respect of benefits amounted to £7500; £6000 were spent weekly on medical benefit and £1700 on maternity benefit. There were 966 medical men and 668 chemists on the panels. £8000 had been received for mileage allowance. Persons living more than three miles from any medical man had been noted, and it was reasonable that account should be taken of the nature of the country to be traversed. As to sanatorium benefit, there had been but three institutions dealing with tuberculosis in Wales in 1911, but now there was a network of them, with the result that already 796 patients had received treatment in sanatoriums and 1018 in hospitals, 9241 having been treated or recommended for treatment at institutes and visiting stations.

UNALLOTTED FUNDS AT CROYDON.

The Croydon Insurance Committee has decided to allocate the fund in its hands, arising from 10,000 insured persons not having selected a medical man on the panel, in the following manner. One-half to be divided among all the practitioners on the panel in proportion to the number of patients on the list of each, the other half equally between them. The medical men in return are to undertake to treat any of the insured persons who have thus failed to make their choice and who may come to them, after which the name of any such patient is to be placed according to circumstances on the list of a medical man.

CHEMISTS' GRIEVANCES IN MANCHESTER.

It appears that the Manchester chemists are very indignant as to the way they have been dealt with since the coming into force of the National Insurance Act, which they did their best to further by cheerful and willing coöperation. There seems to have been what is called "over-prescribing" by some medical practitioners, and the drug fund does not seem to meet all the expenditure of the chemists, who have not so far received payment in full for the prescriptions made up by them. In Salford there are 109 medical practitioners and 52 chemists on the list of the Salford Committee. Up to Dec. 14th, 1913, the chemists' claims amounted to £11,194. The drug money available for the period at 2s. a head was £7516, which works out at a little over 66 per cent. of the amounts claimed.

TORONTO GENERAL HOSPITAL.—The Private Patients' Pavilion of the Toronto General Hospital was opened on Jan. 6th by his honour Sir John Gibson, the Lieutenant-Governor of Ontario. This marks the completion of the Toronto General Hospital, which has been erected at a cost of £700,000. The out-patients' pavilion, which has been luxuriously furnished, cost £71,800 to construct and £10,000 to equip. The charges will range from about £3 3s. to £20 a week. The foundation-stone of the new hospital was laid on April 11th, 1911, by Earl Grey.

Medical News.

UNIVERSITY OF OXFORD.—The following medical degrees have been conferred:—

B.M.—C. W. Wheeler-Bennett, Christ Church; and R. S. A. Heathcote and W. W. Waller, New College.

UNIVERSITY OF CAMBRIDGE.—The following medical degrees have been conferred:—

M.D.—A. J. Clark, King's; and A. C. D. Firth, Trinity.
M.B. and B.C.—F. S. Tinker, Pembroke; and D. S. Bryan-Brown, Downing.
B.C.—J. Deighton, Trinity; A. G. G. Thompson, Pembroke; W. Boys-Stones, Caius; and J. Brewer, Emmanuel.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—E. M. D. N. Baker (Sections I. and II.), Brussels; J. C Gillies (Sections I. and II.), Leeds; T. H. W. Idris (Sections I. and II.), University College Hospital; and S. de Moor (Section II.), D. Schonken (Section II.), and J. D. Schonken (Section II.), Amsterdam.
Medicine.—C. Bluett (Section I.), London Hospital; E. S. Dufty (Sections I. and II.), Sheffield; J. C. Gillies (Sections I. and II.), Leeds; G. B. Holroyde (Sections I. and II.), London Hospital; S. de Moor (Sections I. and II.), Amsterdam; J. A. Prendergast (Sections I. and II.), Leeds; E. Renouf (Sections I. and II.), Royal Free Hospital; J. D. Schonken (Section I.), Amsterdam; and J. A. Watson (Sections I. and II.), London Hospital.
Forensic Medicine.—E. M. D. N. Baker, Brussels; E. S. Dufty, Sheffield; J. C. Gillies, Leeds; S. de Moor, Amsterdam; J. A. Prendergast, Leeds; and E. Renouf, Royal Free Hospital.
Midwifery.—E. S. Dufty, Sheffield.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—E. M. D. N. Baker, T. H. W. Idris, S. de Moor, J. A. Prendergast, and D. Schonken.

LITERARY INTELLIGENCE.—Messrs. Cassell and Co., Limited, announce for immediate publication "Surgical Diseases and Injuries of the Genito-Urinary Organs," by Mr. Thomson Walker.

MEDICAL BARRISTERS.—The following medical practitioners were called to the Bar on Jan. 26th: Inner Temple, Dr. W. H. L. McCarthy; Middle Temple, Dr. Robert Scott and Mr. H. C. Waldo.

THE PROVISION FOR TUBERCULOSIS TREATMENT IN LONDON.—The Metropolitan Asylums Board on Jan. 24th devoted further consideration to the question of provision in London for treatment of tuberculosis. Pending the receipt of a complete statement from the London County Council of the accommodation required, the Local Government Board had intimated that it was very desirable that further immediate provision, if only of a temporary nature, should be made for hospital cases. To meet this request the General Purposes Committee proposed to take a lease of a receiving home for children in Milman-street, Chelsea, from the Westminster board of guardians. There would be accommodation for 50 patients, and the cost per head was estimated at 35s. a week. The present arrangements at the Downs Sanatorium, proceeded the committee, were quite insufficient to allow of adequate classification of patients, and hospital cases were being received as well as cases for which the institution was opened. Except for the beds which the Insurance Committee had been able to engage in private sanatoriums London had no suitable open-air sanatorium available for early cases most needing and most likely to repay institutional care and treatment, and in this respect the metropolis was far behind some of the Home Counties, which had made considerable advance towards the provision of new sanatoriums. The Asylums Board, of course, was not a free agent in this matter and could make no progress in it, even by agreement with the Insurance Committee, without the concurrence of the County Council. The present temporary and unsatisfactory arrangements came to an end in March, and would have to be extended unless a permanent and comprehensive scheme were entered into by that time. Having regard to the need for a modern and up-to-date open-air sanatorium for early cases, the General Purposes Committee considered that the Asylums Board should take the preliminary steps towards such provision without waiting for the final settlement of all the principles involved. Until the County Council had settled questions connected

with the treatment of other classes such an institution as proposed would be limited to insured persons. A communication should be sent to the County Council asking it to approve, as a temporary measure, of an agreement being made with the Insurance Committee for this purpose. The Board approved both these proposals of the committee.

SANITARY AFFAIRS AT ILFORD.—From the published reports of the last meeting of the Ilford district council, held on Jan. 27th, it appears that the council refuses to follow the advice of the Local Government Board to reconsider the dismissal of Mr. C. F. Stovin, medical officer of health. On the previous evening a meeting of the townspeople of Ilford passed a resolution asking the council to remove Mr. Stovin's suspension, and similar resolutions have been carried by the local Ratepayers' Association This matter was dealt with in THE LANCET of Jan. 17th, p. 199.

A MEDICAL VETERAN.—Mr. Philip Whitcombe, the oldest medical man in England, died on Saturday last, Jan. 24th. He qualified in 1838 as M.R.C.S. Eng., later taking the diploma of the Society of Apothecaries, and was the first medical officer appointed for the Port of London at Gravesend. His family have for many years been medical practitioners at Cleobury Mortimer, and he was a freeman of Salop by descent, his ancestors dating their freedom since 1423. One of his sons is Dr. P. Percival Whitcombe, and another is the present Bishop of Colchester. Mr. Philip Whitcombe's memory at the age of nearly 98 was unimpaired, and he did a certain amount of professional work as recently as ten years ago, and could read without glasses until the age of 92. Truly a medical veteran.

BOOKS, ETC., RECEIVED.

MASSON ET CIE, Paris.

Traité de Chirurgie d'Urgence. Par Félix Lejars, Professeur à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Saint-Antoine. Septième édition, revue et augmentée. Price Fr. 30.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

A Text-book of Physiology for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Sc.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Fifth edition, thoroughly revised. Price, cloth, 15s. net.

Principles of Surgery. By W. A. Bryan, A.M., M.D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Price, cloth, 18s. net.

Materia Medica, Pharmacology, Therapeutics, Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph.G., M.D., Associate in Pharmacology and Therapeutics at Columbia University. Price, cloth, 15s. net.

Essentials of Prescription Writing. By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. Price, cloth, 5s. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Spezielle Pathologie und Therapie innerer Krankheiten. In 10 Bänden. Herausgegeben von Friedrich Kraus und Theodor Brugsch in Berlin. Lieferung 13–16. Price M.8. (Preis jeder Lieferung M.2 or K.2.40.)

Lehrbuch der physiologischen Chemie. In Vorlesungen. Von Prof. Dr. Emil Abderhalden, Direktor des Physiologischen Institutes der Universität Halle a.S. Dritte, vollständig neu bearbeitete und erweiterte Auflage. I. Teil. Die organischen Nahrungsstoffe und ihr Verhalten im Zellstoffwechsel. Price, paper, M.21; bound, M. 23.

VINTON AND CO., LIMITED, 8, Bream's Buildings, Chancery-lane, London, E.C.

Live Stock Journal Almanac for 1914. Price 1s.; cloth, 2s.

VOGEL, F. C. W., Leipzig.

Kurzgefasste Lehre von den Knochenbrüchen. Mit besonderer Berücksichtigung ihrer Mechanik und Biologie. Herausgegeben von Dr. F. de Quervain, o.ö. Professor der Chirurgie und Direktor der chirurgischen Universitätsklinik in Basel. Unter Mitarbeit von Dr. Th. Christen in Bern, Dr. H. Iselin in Basel, und nach den Mitteilungen und Aufzeichnungen des verstorbenen Dr. H. Zuppinger in Zürich. Price, paper, M.9; bound, M.10.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. MACMILLAN COMPANY OF CANADA, LIMITED, Toronto.

The Fæces of Children and Adults; their Examination and Diagnostic Significance, with Indications for Treatment. By P. J. Cammidge, M.D. Lond. Price 17s. 6d. net.

Natural Therapy. A Manual of Physiotherapeutics and Climatology. By Thomas D. Luke, M.D., F.R.C.S. Edin., Medical Superintendent, Peebles Hydropathic, N.B.; and Norman Hay Forbes, F.R.C.S. Edin., F.R.S. Edin. Price 5s. net.

Plain Rules for the Use of Tuberculin. By R. Allan Bennett, M.B. Lond., Physician in Charge, Devon County Council Tuberculosis Dispensary, Torquay. Price 2s. 6d. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BERRY, FRANCES MAY DICKINSON, M.D. Lond., has been reappointed Anæsthetist to the Royal Free Hospital.

CASTELLAIN, H. GEORGE P., M.A., B.C. Cantab., has been appointed Medical Registrar to St. Mary's Hospital.

CLARKE, RICHARD CHRISTOPHER, M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Physician to the Bristol Royal Infirmary.

COOPER, GEORGE, B.A., M.D. Belf., has been appointed House Physician at the National Hospital for the Paralysed and Epileptic, Queen-square, W.C.

DAVIDSON, JAMES, M.B., Ch.B. Aberd., has been appointed Second House Surgeon at the Derbyshire Royal Infirmary.

DAVIES, IVOR J., M.D., B.S. Lond., M.R.C.P. Lond., has been appointed Honorary Assistant Physician to King Edward VII.'s Hospital, Cardiff.

DONSON, J. F., M.S. Lond., F.R.C.S. Eng., has been appointed External Examiner in Surgery in the University of Durham.

DOUGAL, DANIEL, M.D. Vict., has been appointed Honorary Assistant Surgeon for Women at the Manchester Northern Hospital.

EVANS, H. T., M.B., Ch.B. Oxon., M.B., B.S. Lond., has been appointed Honorary Assistant Physician to King Edward VII.'s Hospital, Cardiff.

FREW, ROBERT S., M.D. Edin., M.R.C.P. Lond., has been appointed Assistant Physician for Diseases of Children to King's College Hospital.

GUTHRIE, DOUGLAS J., M.D. Edin., has been appointed Clinical Assistant in the Electro-Therapeutic Department of the Edinburgh Royal Infirmary.

HOPE, CHARLES W. M., M.D., B.S. Durh., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Throat Department at King's College Hospital.

JOHNSTONE, D., M.B., B.Ch. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cromarty District of the county of Ross and Cromarty.

KANN, ANNE L., M.B., B.S. Lond., has been reappointed Anæsthetist to the Royal Free Hospital.

MACDONALD, A. H., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Warminster District of the county of Wilts.

MILBANK-SMITH, H J. M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Worthing District of the county of Sussex.

MOSS, HELEN I., M.D. Lond., has been appointed Assistant Anæsthetist and Junior Clinical Assistant to the Gynæcological Department at the Royal Free Hospital.

ORR, VIVIAN B., M.B., B.S. Melb., L.R C.P. Lond., M.R.C.S., has been reappointed Anæsthetist to the Royal Free Hospital.

SHEPLEY-PART, JOHN, M.D. Brux., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Radiographer to Mount Vernon Hospital for Consumption and Diseases of the Chest.

TURNBULL, JANE H., M.D. Lond., has been reappointed Anæsthetist to the Royal Free Hospital.

TURNER, F. DOUGLAS, M.B. Lond., has been appointed Medical Superintendent of the Royal Eastern Counties Institution for Imbeciles and the Feeble-minded, Colchester.

WHITE, ARTHUR, M.R.C.S., L.R.C.P. Lond., L.D.S. Eng., has been appointed Dental Surgeon to the Belgrave Hospital for Children, London.

WILLIAMS, W. M., L.R.C.P. & S. Edin., L.F P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Pontyberem District of the county of Carmarthen.

WILLIAMSON, A. J., M.D. Aberd., D.P.H. Camb., has been appointed Tuberculosis Officer to the County Council of Essex.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL HOSPITAL FOR SICK CHILDREN.—Female Superintendent.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon and Junior House Surgeon. Salary £120 and £100 per annum respectively, with board and laundry.

BIRKENHEAD UNION.—Senior Resident Assistant Medical Officer. Salary £150 per annum, with board, apartments, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Pathologist. Salary £50 per annum.

BRADFORD ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS, Isleworth, W.—Second Assistant Medical Superintendent, unmarried. Salary £150 per annum.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon for six months. Salary at rate of £30 per annum, with residence, board, and washing.

CALCUTTA, CORPORATION OF.—Two District Health Officers. Salary Rs.500 per month each, and all allowances.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer, unmarried. Salary £220 per annum, with apartments, attendance, laundry, &c.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum each, with board, residence, and laundry.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £200 per annum, with board, lodging, washing, &c.

CHESTER, COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board and washing. Also Honorary Radiographer. Also Physician to Out-patients.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

DARENTH INDUSTRIAL COLONY FOR THE FEEBLE-MINDED, Dartford, Kent.—Third Assistant Medical Officer, unmarried. Salary £180 per annum, with board, lodging, and washing

DERBY COUNTY ASYLUM, Mickleover, Derby.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

DONCASTER ROYAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary £100 per annum, with board, apartments, and washing.

DORCHESTER, COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £250 per annum, with board, lodging, &c.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

DURHAM COUNTY COUNCIL.—Assistant Tuberculosis Medical Officer. Salary £300 per annum.

DURHAM COUNTY ASYLUM.—Third and Fourth Assistant Medical Officers, unmarried. Salary £200 per annum, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician and Assistant Casualty Officer for six months. Salary at rate of £75 per annum, with board, residence, laundry, &c.

EAST SUFFOLK, ADMINISTRATIVE COUNTY OF.—Assistant to County Medical Officer of Health. Salary £300 per annum.

EAST SUSSEX COUNTY ASYLUM, Hellingly.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, washing, and attendance.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £60 per annum, with board and laundry.

GLASGOW DISTRICT MENTAL HOSPITAL, Lenzie.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, attendance, and laundry.

GLOUCESTER, BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary £200 per annum, with board, &c.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Assistant Casualty Officer for Out-patient Department, Bayham-street. Salary at rate of £60 per annum, with board, residence, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Physician and House Surgeon, unmarried, for six months. Salary £30 each, with board and residence, &c. Also Surgeon Dentist.

HOSPITAL FOR WOMEN, Soho-square, W.—Clinical Assistants in Out-patients Department.

HUDDERSFIELD, COUNTY BOROUGH OF.—Assistant School Medical Officer. Salary £300 per annum.

ISLE OF ELY, ADMINISTRATIVE COUNTY OF.—Assistan Medical Officer of Health. Salary at rate of £350 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

LEEDS GENERAL INFIRMARY.—Resident Aura Officer and Resident Obstetric Officer. Salary £100 and £50 per annum respectively, with board, residence, and laundry. Also House Physician for six months. Board, residence, and laundry provided.

LIVERPOOL CITY INFECTIOUS DISEASES HOSPITAL.—Two Assistant Resident Medical Officers, unmarried. Salary £150 per annum, with board, washing, and lodging.

LONDON HOMŒOPATHIC HOSPITAL, Great Ormond-street and Queen-square, Bloomsbury, W.C.—Assistant Physician. Also Assistant Surgeon for Diseases of the Eye. Also Assistant Gynæcological Physician.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer. Salary £200 per annum, with board, residence, and washing. Also Assistant Resident Medical Officer for six months. Salary at rate of £40 for six months, with board, residence, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, attendance, washing, &c.

MANCHESTER ROYAL INFIRMARY.—Accident-room House Surgeon for six months. Salary £100 per annum, with board and residence. Also Assistant Medical Officer, unmarried, to Convalescent Hospital, Cheadle, for six months. Salary at rate of £80 per annum, with board and residence.

MANCHESTER TOWNSHIP WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, attendance, &c.

MIDDLESEX HOSPITAL, W.—Director of Institute of Pathology. Salary £800 per annum.

NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Honorary Physician.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

NOTTINGHAM, CITY OF.—Assistant Medical Officer, unmarried, for Bagthorpe Institution and Infirmary, for six months. Salary at rate of £165 per annum, with apartments, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments, &c.

NOTTINGHAM, RANSOM SANATORIUM, Sherwood Forest, Mansfield.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

PADDINGTON INFIRMARY.—Assistant Medical Superintendent of Infirmary and Medical Officer of Workhouse. Salary at rate of £170 per annum, with board, lodging, and washing.

PERTH DISTRICT ASYLUM.—Assistant Physician. Salary £150 per annum and all found.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon Dentist.

PRESTON, COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and washing.

PRESTON ROYAL INFIRMARY.—House Physician. Salary £100 per annum, with board, residence, and laundry.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon. Salary at rate of £80 per annum, with lodging, board, and laundry.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—Resident House Physician. Salary at rate of £110 per annum, with board, residence, and laundry.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £125 per annum.

ST. AUSTELL UNION AND RURAL DISTRICT COUNCIL AND WORKHOUSE.—Medical Officer. Salary £400 per annum for combined appointment.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c. Also Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHEFFIELD CITY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

SHREWSBURY, COUNTY ASYLUM.—Senior Assistant Medical Officer and Second Assistant Medical Officer, unmarried. Salary £250 and £200 per annum respectively, with board, apartments, laundry, attendance, &c.

SOUTHWARK, METROPOLITAN BOROUGH OF.—Tuberculosis Officer. Salary £500 per annum.

STRAITS SETTLEMENTS GOVERNMENT.—Three Medical Officers. Salary £300 per annum.

SUNDERLAND ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £125 per annum, with board, apartments, and laundry.

TADCASTER, GOOLE, RICCALL, AND SELBY RURAL DISTRICTS AND SELBY URBAN DISTRICT.—Medical Officer of Health. Salary £500 per annum.

TOOTING BEC ASYLUM, Tooting, S.W.—Third Assistant Medical Officer, unmarried. Salary £180 per annum, with board, lodging, and washing.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Pathologist and Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

WARWICK COUNTY ASYLUM, Hatton, near Warwick.—Second Assistant Medical Officer, unmarried. Salary £225 per annum, with board, lodging, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Physician. Salary at rate of £75 per annum, with board, residence, and washing.

WEST HAM, COUNTY BOROUGH OF, TEMPORARY SANATORIUM, Dagenham, Essex.—Resident Medical Officer, unmarried. Salary at rate of £300 per annum, with apartments, board, and washing.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Arnesby, in the county of Leicester; at Ballyward, in the county of Down; at Midleton, in the county of Cork; and at New Ross, in the county of Wexford.

*** The summary of vacant appointments, published weekly in this column, is, equally with other articles, the literary copyright of the Proprietors of THE LANCET.

Births, Marriages, and Deaths.

BIRTHS.

BRUCE.—On Jan. 27th, at 72a, East Dulwich-grove, S.E., the wife of H. W. Bruce, M.D., F.R.C.S., of a daughter.

DICK.—On Jan. 24th, at Roxeth, The Glebe, Blackheath, the wife of F. A. Dick, M.B., B.S., of a daughter.

HIGGS.—On Jan. 21st, at Palace Mansions, Kensington, the wife of Frederick W. Higgs, M.D., of a daughter.

MANBY.—On Jan. 25th, at Victoria-street, Westminster, to Dr. and Mrs. E. P. Manby, a son.

MARRIAGES.

WOOD—KEIR.—On Jan. 20th, at St. Marylebone Presbyterian Church, W., Stanley Wood, M.R.C.S., L.R.C.P., to Mary Robb Keir, of Laurieston, Falkirk.

DEATHS.

WHITCOMBE.—On Jan. 24th, at Gravesend, Philip Whitcombe, M.R.C.S., in his 98th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PAPER CLOTHING.

DURING every cold snap in recent years several newspapers have alluded to the virtues of paper as a chest-protector to keep out the cold "quite as well as flannel but with less bulk." This is a debatable matter, but there is no doubt about the utility of paper as clothing. Paper is no new substance for clothing, and has been in use amongst the Chinese and Japanese for a long time. Japanese and Chinese ladies are accustomed to underclothing made of a tough silky paper, and European ladies have worn sets of the same material, although difference of climate and custom have precluded the spread of the fashion, and perhaps also the inferior quality of the paper supplied to some experimenters. Some years ago during a very hot English summer there was an attempt to spread its use, but our climate is fickle, and fashion also. Paper is the successor to parchment (membrana) or vellum, and those to the papyrus or paper reed. But brown paper, the first kind to be manufactured in any quantity in this country, is without doubt the best for retaining heat. A sheet of brown paper heated by the fire and folded a few times and put into a pocket near the body is like a pocket stove. A sheet may be inserted between the lining and cloth of a waistcoat or thin coat. A sheet folded and cut to the shape of the feet is a useful addition in bad weather for those who wear thin boots. Made into "tubes" it will act as underneath gaiters for a like reason. Used on a bed it has been called "the poor man's blanket," but is rather a crackling coverlet. On Dec. 13th, 1879, THE LANCET recommended the poor to stitch strong sheets of thick paper on the backs of ragged quilts. More than one gentleman in the old days drove his gig in the winter in the country with a paper cup or "twist" covering his nose to keep it warm and free from frost-bite.

AN OBJECTIONABLE SOLICITATION.

To the Editor of THE LANCET.

SIR,—A London firm of opticians has a branch in the city in which I practise. Some two years ago a patient of mine obtained glasses from this branch on my prescription. A few days ago he received the following letter written in the name of the firm by the manager of the branch, and thinking it curious kindly forwarded it to me:—

> **Jan. 13th, 1914.—Dear Sir,—Upon looking through our books we find that it is now over two years since you last consulted Dr. ——. As with sight like yours it is always desirable to have the eyes periodically examined, we take the liberty of calling your attention to the matter, in case the lapse of time may have been unnoticed by you. We are, Sir, yours respectfully,**

Disapproving such action I called on the manager and learned that he had written about 30 letters of the kind since the beginning of the year, referring to different ophthalmic surgeons, and that the head establishment in London has been in the habit of doing this for some years past. He regretted my disapproval, promised to make no further use of my name, and undertook to write to each patient of mine to whom such a letter had been sent saying that it had been sent without my knowledge. Other ophthalmic surgeons may be interested to know of this custom. I enclose my card. I am, Sir, yours faithfully,

Jan. 19th, 1914. OPHTHALMIC SURGEON.

KING'S COLLEGE HOSPITAL.

THE *Hospital Gazette* for January is devoted to an illustrated description of the new King's College Hospital at Denmark Hill. First comes a detailed architectural description, with plans and many half-tone pictures. This is followed by a description of the engineering plant similarly illustrated, and a brief article on the drainage, water-supply, and fire main. The price of the issue is 1s. 3d., including postage. All those interested in hospital construction will find useful information in this detailed account, showing how problems have been solved and difficulties overcome in the construction of this institution.

A PISTOL PIPE.

EVERYBODY has read or heard stories of burglars and other intruders being frightened away by the presentment of a tobacco-pipe in lieu of a pistol, either directly or by the casting of a shadow on the blind, but it now appears that a tobacco-pipe may in reality serve the purpose of a pistol. An assistant master at an Essex school was recently smoking a large calabash pipe when an explosion occurred, the pipe burst, and a shot flew out of the stem and entered the wall. No one fortunately was hurt, otherwise the accident might have been the subject of an interesting medico-legal inquiry. The smoker's explanation is that shortly before the explosion he had been to the miniature rifle range and had practised shooting. He assumes that a live cartridge in his pocket lodged by accident in the pipe and that after he had filled the bowl and had been smoking for a few minutes the burning tobacco fired the cartridge.

"A MUSEUM OF SANITARY DEFECTS."

AT the last meeting of the Holsworthy (Devon) urban district council the medical officer of health in reporting some cottages as uninhabitable stated that the Local Government Board inspector had recently referred to them as a "museum of sanitary defects."

THE COMPLIMENTARY DINNER TO DR. ADDISON.

Dr. H. H. Mills asks us to state that this dinner has been unavoidably postponed until Friday, Feb. 6th. It will be held at the Hôtel Métropole, London, at 7.30. Reception from 7 to 7.30.

M. C.—The following French and German medical journals will probably suit the requirements of our correspondent:—*Paris Médical* (first issue of the month, 50 centimes; other numbers, 20 centimes; subscription for abroad, 15 francs), published weekly by Messrs. J. B. Baillière et Fils, 19, rue Hautefeuille, Paris. *Le Progrès Médical* (weekly, 20 centimes; subscription, 12 francs), M. A. Rouzaud, 41, rue des Écoles, Paris. *Berliner Klinische Wochenschrift* (weekly; quarterly subscription, 6 marks), published by August Hirschwald, Unter den Linden, 68, Berlin, N.W. *Deutsche Medizinische Wochenschrift* (weekly; subscription for abroad, 8 marks, quarterly, single numbers, 80 pf.), published by Georg Thieme, Antonstrasse, 15, Leipzig.

Dubitas appears to be correct in his opinion as to the effect of Section 67, Subsection 3, of the Mental Deficiency Act, 1913, the applicability of Section 11, Subsection 2, depending upon the nature of the case which he has in his mind. It may be suggested that the secretary to the Board of Control, if invited, would probably be willing to remove any doubt (the Act to be interpreted being a new one).

E. R. O.—The following book will most likely suit our correspondent's requirements:—"Manual of Bacteriology." By Robert Muir, M.D., and James Ritchie, M.D. Sixth edition. 1913. London: Henry Frowde and Hodder and Stoughton. A review of this book appeared in THE LANCET of Oct. 25th, 1913, p. 1193.

A. el H.S.—The five volumes of Professor Keen's "Surgery" were reviewed in THE LANCET of the following dates:—Jan. 11th, 1908; Feb. 1st, 1908; Sept. 26th, 1908; July 10th; 1909; and Feb. 26th, 1910. A sixth supplementary volume was reviewed on Oct. 11th. 1913.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced.

In 1914:—

Feb. 7th–11th (Glasgow).—Northern Nursing and Midwifery Conference.
„ 9th–14th (Auckland).—Australasian Medical Congress.
April 13th–16th (New York).—Fourth Congress of the International Surgical Society. (President: Prof. Depage, Bruxelles.
„ 14th–18th (New York).—Fourth Congress of the International Surgical Society.
„ 15th–18th (Berlin).—Forty-third Congress of the German Surgical Society.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 28th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 22	30·15	E.	...	45	38	35	34	35	Overcast
„ 23	30·19	N.E.	...	48	38	30	30	30	Foggy
„ 24	30·29	S.	...	44	35	25	27	27	Foggy
„ 25	30·31	S.W.	...	53	45	27	33	36	Overcast
„ 26	30·09	S.W.	0·04	52	47	36	44	44	Raining
„ 27	30·04	S.W.	...	55	46	35	35	36	Cloudy
„ 28	30·21	W.	0·02	52	47	36	43	43	Foggy

The following journals, magazines, &c., have been received:—

St. Mary's Hospital Gazette, Hygienic Laboratory Bulletin of the United States Public Health Service, American Journal of Obstetrics and Diseases of Women and Children, Medical Review of Reviews, Archives de Médecine et Pharmacie Navales, St. George's Hospital Gazette, Indian Medical Gazette, Revista Médica del Uruguay, Albany Medical Annuals, Journal of Obstetrics and Gynæcology of the British Empire, Birmingham Medical Review, Archives of Pediatrics, La Policlinique, British Journal of Dermatology, Annales de Médecine, Canadian Medical Association Journal, Archiv für Schiffs- und Tropen-Hygiene, Journal of Hygiene, South African Medical Record.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Prof. L. Hill, Mr. J. McQueen, and Mr. M. Flack: The Conduction of the Pulse Wave and the Measurement of Arterial Pressure.—Mr. J. Barcroft, Mr. M. Camis, Mr. C. G. Mathison, Mr. F. Roberts, and Mr. J. H. Ryffel: Report of the Monte Rosa Expedition of 1911.—Mr. C. H. Martin and Mr. K. Lewin: Some Notes on Soil Protozoa. Part I. (Communicated by Mr. H. T. Brown).—Mr. J. F. Gemmill: The Development of the Starfish Asterias Rubens L (communicated by Prof. J. Cleland).—Dr. A. H. Church: On the Floral Mechanism of Welwitschia Mirabilis (Hook) (communicated by Prof. A. C. Seward).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF SURGERY: SUB-SECTION OF ORTHOPÆDICS (Hon. Secretaries—A. S. Blundell Bankart, E. Rock Carling): at 4.30 P.M.

Mr. A. H. Tubby: Case of Operative Reduction of Dislocation of the Elbow.

Mr. Paul B. Roth: Case of Injury to Upper Epiphysis of Left Femur, with Scoliosis.

SECTION OF MEDICINE (Hon. Secretaries—H. Batty Shaw, John Fawcett): at 5 P.M.

Adjourned Discussion:

On Vaccines from the Standpoint of the Physician (opened by Dr. H. D. Rolleston).

SECTION OF PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, C. Price-Jones): at 8.30 P.M.

Laboratory Meeting at the Pathological Department, University College Hospital Medical School.

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—J. Herbert Parsons, Leslie Paton): at 8 P.M.

Cases:

Mr. Frank Moxon: Congenital Diffuse Opacity of the Cornea in Two Sisters.

Discussion (at 8.30 P.M.):

On the Use of Salvarsan in Ophthalmic Practice (opened by Mr. W. Lang, Lt.-Col. Gibbard, R.A.M.C., and Mr. S. H. Browning).

Members desiring to take part in the discussion are asked to notify the Junior Hon. Secretary.

THURSDAY.

SECTION OF OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—T. Watts Eden, C. Hubert Roberts): at 8 P.M.

Specimens:

Dr. Herbert Spencer: (1) Fibroma of the Hymen; (2) Degenerated Myomatous Uterus resembling the Pregnant Organ.

Short Communications:

Dr. T. G. Stevens: Three Cases of Cæsarean Section.

Mr. Gordon Ley and Mr. J. Preston Maxwell (China): Case of Congenital Sacro-coccygeal Tumour.

Paper:

Professor H. Briggs and Dr. R. A. Hendry (Liverpool): Uncontrollable Uterine Hæmorrhage: a Report on 104 Bleeding Uteri after Hysterectomy.

(An Abstract of this paper will be sent on application.)

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—E. A. Peters, Cecil I. Graham): at 4 P.M.

The President (Dr. D. R. Paterson): Two Cases of Intra-nasal Dacryo-cystotomy for Lachrymal Disease.

Cases and Specimens:

Will be shown by Mr. E. B. Waggett, Mr. Lawson Whale, Mr. George Wilkinson (Sheffield), Mr. Harold Kisch, Mr. J. F. O'Malley, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—H. E. G. Boyle, Cecil Hughes): at 8.30 P.M.

Discussion:

On Intratracheal Ether (opened by Mr. Robert H. Kelly, followed by Mr. H. E. G. Boyle).

Dr. P. E. Shipway and Mr. M. S. Pembrey: Observations upon Respiration and Circulation during Intratracheal Anæsthesia.

SECTIONS OF LARYNGOLOGY AND SURGERY: Members of these Sections are specially invited to attend the Meeting of the Section of Anæsthetics.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Lettsomian Lecture:—Dr. F. M. Sandwith: Dysentery.

RÖNTGEN SOCIETY, at the London Hospital, Whitechapel, E.

TUESDAY.—8.15 P.M., Dr. G. Scott will conduct visitors over the X Ray and Electro-therapeutic Departments of the Hospital, give a Demonstration of the Wilson Portable Coil Apparatus, and show a Number of Plates.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Pathological Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY AND WEDNESDAY.—5 P.M., Hunterian Lectures:—Prof. H. Gilford: Infantilism.

FRIDAY.—5 P.M., Hunterian Lecture:—Prof. E. W. H. Groves: Experimental Production and Treatment of Fractures in Lower Animals.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. N. Meachen: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. G. Little: Common Errors in Diagnosis—Skin.

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. F. J. Smith: Common Errors in Diagnosis—Obscure Pyrexia.

WEDNESDAY.—4 P.M., Mr. H. Lett: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: Common Errors in Diagnosis—Nervous System.

THURSDAY.—4 P.M., Dr. R. Russell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. R. A. Gibbons: Common Errors in Diagnosis—Gynæcology.

FRIDAY.—4 P.M., Dr. D. McKenzie: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Diseases of the Rectum.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. Baldwin: Diseases of the Rectum.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Baldwin: Diseases of the Rectum.

THURSDAY.—9 A.M., Dr Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Diseases of the Rectum.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. Baldwin: Diseases of the Rectum.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). X Rays and Electrical Methods. 3 P.M.,

Tuberculosis of Bones and Joints and the Treatment thereof (Mr. Gillespie). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. G. Auld: Action of Ferments in Disease.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel); Clinical Pathology and Pathological Demonstration.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

Course of Lectures on the Neuroses and Psychoses of Children:—

MONDAY.—4.15 P.M., Dr. F. Warner: Action of Brain Corresponding to Motor Signs Observed.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. C. Miller: Tuberculous Infection of the Lung considered Anatomically.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Surgery of the Pituitary Gland.
FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Cerebral Abscess.

QUEEN'S HOSPITAL FOR CHILDREN, Board Room of the Hospital, Hackney-road, N.E.

THURSDAY.—4 P.M., Post-Graduate Lecture: Mr. B. Bankart: Orthopædic Cases.

CANCER HOSPITAL, Museum of the Hospital, Brompton, S.W.

Post-Graduate Lectures on the Diagnosis and Treatment of Cancer:—

WEDNESDAY.—5 P.M., Mr. C. Ryall: Cancer of the Uterus.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. K. Sibley: General Principles of Treatment of Diseases of the Skin.
THURSDAY.—6 P.M., Dr. M. Dockrell: Fungous Diseases of the Hair—I., Hyphogenic Sycosis; II., Tinea.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Bateson: Animals and Plants under Domestication. (Lecture III.)
FRIDAY.—9 P.M., Dr. H. S. H. Shaw: The Mechanics of Muscular Effort.

ROYAL INSTITUTE OF PUBLIC HEALTH, Lecture Room of the Institute, 37, Russell-square, W.C.

Course of Instruction for Tuberculosis Officers, School Medical Officers, Medical Practitioners, &c.:—

FRIDAY.—5 P.M., The Diagnosis and Treatment of Tuberculosis, &c.—Lecture IV.:—Mr. J. J. Perkins: Diagnosis of Pulmonary Tuberculosis.

MANCHESTER HOSPITALS POST-GRADUATE CLINIC.

MONDAY.—MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—4.30 P.M., Dr. C. P. Lapage: Malnutrition and Vomiting in Infancy.
TUESDAY.—SALFORD ROYAL HOSPITAL—4.30 P.M., Dr. H. T. Ashby: Broncho-pneumonia in Children.
WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Dr. Ramsbottom: The Differential Diagnosis of Functional and Organic Disease of the Nervous System.
THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Mr. W. H. Hey: Tuberculous Peritonitis.
FRIDAY.—ROYAL EYE HOSPITAL—4.30 P.M., Dr. H. Griffith: Detachment of the Retina—Vitreous Opacities.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Postpartum Hæmorrhage. 11 A.M. Examination of Patients and Minor Operations.
TUESDAY.—10 A.M., Major Operations.
WEDNESDAY.—10 A.M., Obstetrical Lecture: Postpartum Hæmorrhage (continued). 11 A.M., Examination of Patients and Minor Operations.
THURSDAY.—10 A.M., Major Operations.
FRIDAY.—10 A.M., Gynæcological Lecture: Prolapse of the Uterus. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1913 were given in THE LANCET of Dec. 27th, 1913.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1913 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Automobile Association and Motor Union, Lond.; Ashton-under-Lyne District Infirmary, Secretary of; Monsieur J. Astier, Asnières; Dr. T. Cuming Askin, Alderton; Mr. A. G. Ambrosi, Milan; Messrs. Armour and Co., Lond.; Dr. Henri Aimé, Paris.

B.—British Aluminium Co., Lond.; Barnwood House, Gloucester, Medical Superintendent of; Messrs. Burge, Warren, and Ridgley, Lond.; Messrs. W. B. Bellerly and Son, Selby; Messrs. Butterworth and Co., Lond.; Birkenhead Union, Clerk to the; Messrs. Baillière, Tindall, and Cox, Lond.; Mr. C. Banting, Lond.; Mr. G. L. Bates, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. W. R. Bates, Ilkley; International Conference on the Blind, Lond., Hon. Secretary of.

C.—County Asylum, Dorchester, Medical Superintendent of; Mr. H. A. Collins, Croydon; Dr. L. P. Colat, Paris; *Clinical Journal*, Lond., Secretary of; Calcutta Corporation, Secretary of; Central Correspondence College, Lond.; Messrs. G. W. Carnrick Co., Lond.; Dr. W. H. Coates, Patrington; Mr. J. B. Coleman, Lond.; Cheadle Royal, Cheadle, Medical Superintendent of; Messrs. B. Cook and Co., Lond.; Messrs. Cassell and Co., Lond.; Mr. J. Jackson Clarke, Lond.; Central Mining and Investment Corporation, Lond.; Mr. A. Clement, Lond.; Dr. S. Solis Cohen, Philadelphia.

D.—Messrs. S. Deacon and Co., Lond.; Messrs. T. Dixon and Sons, Lond.; "Dubitas"; Messrs. W. Dawson and Sons, Lond.; Mr. W. S. Dickie, Middlesbrough; Mr. J. Davis, Lond.; Dundee Royal Infirmary, Leeds, Medical Supt. of; Dr. Arthur Drury, Halifax; Dr. B. Dunlop, Lond.

E.—Edmonton Union Infirmary, Lond., Medical Superintendent of; Mr. H. S. Elworthy, Bbbw Vale; Messrs. Eyre and Spottiswoode, Lond.; Eugenics Education Society, Lond., Hon. Secretary of; Messrs. W. and T. Evans, Cork; Dr. John Eyre, Lond.

F.—Messrs. L. Farmer and Sons, Lond.; Miss M. C. Ferrier, Alnwick; Dr. W. Manson Ferguson, Banff; Fine Art Society, Lond.; Dr. C. E. Finny, Lond.; Messrs. Ferris and Co., Bristol.

G.—Dr. D. J. Guthrie, Edinburgh; Great Yarmouth Hospital, Secretary of; Great Yarmouth Nursing Home, Lady Superintendent of; Glasgow Lunacy District Board, Lenzie, Medical Superintendent of; Dr. W. Griffith, Lond.; Dr. A. D. Gardner, Lond.; Messrs. Grimwade, Ridley, and Co., E.C.; Mr. E. G. Gambiett, Lond.; Mr. E. W. Hey Groves, Clifton; Mr. W. J. Greer, Newport; Garden Cities and Town Planning Association, Lond., Secretary of.

H.—Mr. J. Highfield, Lond.; Hospital for Sick Children, Newcastle-on-Tyne; Messrs. Hanna and Neale, Dublin; H. H.; Dr. D. Fraser Harris, Halifax, Nova Scotia; Mr. N. Bishop Harman, Lond.; Messrs. W. Holmes and Sons, Lond.; Dr. T. J. Horder, Lond.; Mr. Frank M. Hughes, Gravesend; Dr. R. H. Hughes, Whitchurch; Dr. R. H. Hughes, Tavistock; Mr. P. Maynard Heath, Lond.; Messrs. Hazell, Watson, and Viney, Lond.

I.—Isle of Ely County Council, March, Clerk to the; Dr. Abd el Aziz Ismail, Cairo; Incorporated Society of Trained Masseuses, Lond., Secretary of.

J.—Dr. H. L. Jones, Lond.; Mr. J. West Jones, Briton Ferry.

K.—Messrs. Kutnow and Co., Lond.; Dr. Knuthsen, Lond.; Messrs. H. C. Konig and Co., Lond.; Mr. W. G. Cooper King, Lond.; King Edward VII.'s Hospital, Cardiff, Secretary of; Kensington, Medical Officer of Healthof; Dr. H. N. Khouri, Nazareth; Dr. Henry Kenwood, Lond.

L.—London Temperance Nurses' Co-operation, Lond., Secretary of; Mr. H. K. Lewis, Lond.; Lady Margaret Hospital, Bromley, Secretary of; Leeds Guardians, Clerk to the; Messrs. E. and S. Livingstone, Edinburgh; London Society of Children's Friends; Local Government Board, Lond., Medical Officer of; Messrs. Lee and Nightingale, Liverpool; Liverpool Corporation, Clerk to.

M.—Messrs. Meister, Lucius, and Brüning, Lond.; Messrs. Macmillan and Co., Lond.; Messrs. C. Mitchell and Co., Lond.; Metropolitan Ear, Nose, and Throat Hospital, Secretary of; Mr. R. Mosse, Berlin; Messrs. Omar Haji Mulla Bros., Maymyo; Dr. Hugh A. Macewen, Lond.; Middlesex Hospital Medical School, Lond., Dean of; Medical Agency, Lond.; Manchester Royal Infirmary, Secretary of; Manchester Guardians, Clerk to the; Dr. Spencer Mort, Lond.; Mr. R. W. Murray, Liverpool; Dr. B. G. Morison, Lond.; Dr. Charles Mercier, Parkstone.

N.—Dr. A. Newsholme, Lond.; Newburgh Free Library, U.S.A.; National Health Insurance Commissioners, Lond., Secretary to; Nottingham Guardians, Clerk to.

O.—Dr. E. R. Orchard, Kingussie; "Ophthalmic Surgeon."

P.—Mr. C. Politachi, Kersal; Mr. E. A. Peters, Lond.; Preston Royal Infirmary, Secretary of; Pendyffryn Hall, Penmaenmawr, Secretary of; Dr. A. S. Percival, Newcastle-on-Tyne.

R.—Dr. R. R. Rentoul, Liverpool; Messrs. Reynolds and Branson, Leeds; Royal Hampshire County Hospital, Winchester, Secretary of; Royal Society of Medicine, Lond., Secretary of; Royal Sanitary Institute, Lond.; Dr. M. Armand Ruffer, Lond.; Dr. C. Russ, Lond.; Mr. S. Russ, Lond.; Royal Anthropological Institute, Lond., Secretary of; Royal Isle of Wight County Hospital, Ryde, Secretary of; Royal Infirmary, Doncaster, Hon. Secretary of; Royal Albert Edward Infirmary, Secretary of; Royal Bucks Hospital, Aylesbury, Secretary of; Dr. Charles Reinhardt, Lond.; Mr. E. H. Ross, Lond.; Mrs. Aubrey Richardson, Lond.; Royal Society of Arts, Lond.

S.—Dr. W. T. Scott, Haslemere; Messrs. Spiers and Pond, Lond.; Southwark Borough, Town Clerk of; Shrewsbury County Asylum, Medical Superintendent of; Mr. G. Steinheil, Paris; Lieutenant J. L. Sen, I.M.S., Darbhanga; Dr. R. Smith, Lond.; Messrs. Schimmel and Co., Lond.; Mrs. Annie Simpson, Lond.; Society of Apothecaries of London, Secretary of; Dr. H. E. Symes-Thompson, Lond.; Messrs. G. Street and Co., Lond.; Dr. H. Oswald Smith, Sanderstead; Dr. W. L. Stuart, Camberley; Mr. D. R. Sharpe, Lond.; Mr. C. F. Scripps, Lond.; Sheffield Education Committee, Secretary of; Dr. Arnold Stott, Lond.; St. Mary's Hospital for Women and Children, Plaistow; Miss J. E. St. Clair, Lond.; Mr. T. R. Swinburne, Kingsdown, Deal; Sir John Bland-Sutton, Lond.; Society of Medical Officers of Health, Lond., Secretary of.

T.—Messrs. W. Thacker and Co., Lond.; Trained Nurses' Institute, Leeds, Superintendent of; Dr. T. Thyne, Brighton; Dr. John Tatham, Old Oxtead; Dr. I. G. Thomas, Hirwain; Taylor's Typewriters Co., Lond.; Thresh Disinfector Co., Lond.

U.—Mr. C. H. Upham, Lyttleton.

V.—Victoria Wine Co., Lond.; Professor Swale Vincent, Winnipeg.

W.—Messrs. A. J. Wilson and Co., Lond.; West Ham and Eastern General Hospital, Lond., Secretary of; Mr. H. Walker, Leeds; Messrs. F. Walser and Co., Lond.; Dr. W. H. Wynn, Birmingham; Dr. B. H. Worth, Lond.; Professor Sims Woodhead, Cambridge; Dr. J. A. Waring, Nottingham; Dr. Chalmers Watson, Edinburgh; Messrs. J. Woodhead and Sons, Huddersfield; Miss A. G. Weaver, Lond.; Dr. J. P. Williams, Tenom; Messrs. John Weiss and Son, Lond.; Sir Max Waechter, Lond.; Messrs. John Wright and Sons, Bristol.

Y.—Yost Typewriter Co., Lond.; York County Hospital, Sec of.

Z.—Messrs. C. Zimmermann and Co., Lond.; Zander Institute, Lond., Superintendent of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. A. B. Aitken, Sunderland; Mr. E. Arnold, Lond.; Messrs. Armbrecht, Nelson, and Co., Lond.; Dr. N. Alexereff Irkutsk; Dr. J. Andrew, Coatbridge; Ardath Tobacco Co., Lond.

B.—Mr. E. P. Brodie, Wickham Market; Messrs. Boyveau and Chevillet, Paris; Bishopstone House, Bedford; Mr. P. Benham, Lond.; Mr. T. S. Brooke, Hemel Hempstead; Messrs. J. L. Bullock and Co., Lond.; Mr. F. A. Brockhaus, Lond.; Mr. S. N. Babington, Bedford; Mr. H. W. Bruce, Lond.; Berks County Blind Society, Kintbury, Hon. Secretary to.

C.—Mr. J. Cæsar, Ilchester; Nurse Clowes, Beccles; Coventry and Warwickshire Hospital, Secretary of; Dr. D. Corbett, Lond.; Dr. A. R. Carmichael, Liverpool; Dr. T. Carruthers, Johnstone; Dr. M. E. Cussen, Pallaskenry; Dr. T. J. P. Crease, Clonmel; Chelsea Guardians, Clerk to the; Messrs. Carnrick and Co., Lond.; Cossham Memorial Hospital, Secretary of.

D.—Professor Dreyer, Oxford; Messrs. Deacon and Co., Lond.; Dr. W. T. Dougal, Pittenweem; Mr. H. M. Davies, Lond.; Mr. D. Duff, Glasgow; Down District Lunatic Asylum, Medical Superintendent of; Dr. H. L. Davies, Cardiff; Denver Chemical Manufacturing Co., Lond.; Messrs. Duncan, Flockhart, and Co., Edinburgh.

E.—Essex County Asylum, Brentwood, Secretary of; Epsom College, Royal Medical Foundation, Lond., Secretary of.

F.—Dr. M. C. Fatin, Cairo; French Hospital, Lond., Secretary of; Dr. A. Fleming, Edinburgh; Dr. G. R. Fox, J.P., Beccles; Messrs. Farnell and Rook, Eastbourne; Messrs. Fannin and Co., Dublin; Mr. E. K. Frazer, Ballymote; F. T. A.

G.—Mr. W. J. Gifford-Gayton, March; Dr. S. Gill, Liverpool; Messrs. Gordon and Gotch, Lond.; Mr. J. Galt, Cottingham; Miss I. M. Guillaume, North Shields; Dr. A. F. Galloway, Lond.; Dr. H. Bellamy Gardner, Lond.; Mr. G. H. Gemmell, Edinburgh; General Life Assurance Co., Lond.; Dr. R. M. Gil, Malaga; Mr. P. G. Garrett, Hinckley; Mr. R. Grieve, St. Albans.

H.—Dr. W. S. Hall, Bradford; Dr. W. C. Horton, Brighton; Dr. T. Houston, Belfast; H. W. P.; Messrs. Hawksley and Son, Lond.; Mr. W. H. Hall, Woking; Messrs. C. Hearson and Co., Lond.; Dr. H. E. Haynes, Brentwood; Huddersfield County Borough, Treasurer to the; H. E. D.; Mr. S. D. Hunter, Hitchin; Dr. A. J. Hall, Sheffield; Mr. H. J. Hutchens, Newcastle-on-Tyne; Mr. E. Hollins, Tamworth.

J.—Dr. A. Bassett Jones, Aberystwyth; J. M. G.; J. R. B. A.

K.—Mr. T. Kelly, Tipperary; Messrs. H. S. King and Co., Lond.; Messrs. Knoll and Co., Lond.

L.—Mr. T. Laffan, Cashel; Dr. E. G. Little, Lond.; Mr. A. Lawson, Lond.; Dr. T. S. Logan, Stone; Messrs. Lee and Martin, Birmingham; Lancashire County Asylum, Winwick; Mr. H. H. Lacy, Warwick; Liverpool Medical Institution, Resident Librarian of; Liverpool Stanley Hospital, Secretary of.

M.—Mr. Mitchell, Seaton; *Medical Notes and Queries*, Philadelphia; Messrs. Matthews Bros., Lond.; Mr. R. Miyoke, Okayama; Messrs. W. K. Norton and Sons, Lincoln; Medical Sickness and Accident Society, Lond., Secretary of; Mr. K. V. G. Menon, Tellicherry; Dr. D. McColl, Tamworth; Messrs. Maple and Co., Lond.; Dr. J. E. Macilwaine, Belfast; Metropolitan Borough of Bermondsey, Treasurer to; Dr. M. Mackinnon, Lond.; Dr. M.; Dr. J. A. Mitchell, Buckland Newton; Dr. G. Macdonald, Edinburgh; Medical Defence Union, Lond.; Dr. J. Matthewson, Keswick; Maltine Manufacturing Co., Lond.; Manchester Hospital for Consumption, Secretary of.

N.—National Hospital for the Paralysed and Epileptic, Lond.; Nottingham General Hospital, Secretary of; Newcastle-on-Tyne Corporation, Treasurer to the; Norfolk and Norwich Hospital, Secretary of; Noble's Isle of Man General Hospital, Secretary of; Nottingham Education Committee, Treasurer to the.

O.—Dr. C. O'Gorman, Southampton; Messrs. d'Oleire and Rasch, Strassburg.

P.—Prince of Wales's General Hospital, Lond., Director of; Mr. R. J. Pye-Smith, Sheffield; Dr. F. Pilkington, Lechlade; Dr. J. H. Philbrick, Bournemouth; Peterborough Medical Society, Ontario, Secretary of; Dr. H. W. Parrott, Bristol.

R.—Mr. G. H. Rossdale, Oxford; Messrs. Raimes and Co., York; Royal Institute of Public Health, Secretary of; Messrs. Rosenberg and Hellier, Turin; Royal Infirmary, Manchester, Secretary of; Dr. J. Russell, Scarborough; Rochester and Chatham Printing and Stationery Co., Director of; Dr. F. P. Reilly, Lond.; Dr. A. Routh, Lond.; Dr. N. R. Rawson, Crawcrook; Dr. J. M. Renton, Bournemouth; Royal Surrey County Hospital, Guildford, Secretary of.

S.—Dr. H. B. Scargill, Ilkley; South Devon and East Cornwall Hospital, Plymouth, Secretary of; St. George's Hospital, Medical School, Lond., Dean of; Messrs. W. H. Smith and Son, Lond.; Mr. H. Spong, Leeds; Springfield House, Asylum, Bedford; Dr. G. B. Salford, Malvern, Victoria; Sangli State, India, Chief Medical Officer of; Messrs. R. Sumner and Co., Liverpool; Southend-on-Sea, Borough of, Treasurer to; St. Bartholomew's Hospital, Lond., House Surgeon of; Mr. H. E. Scoones, Hythe; Salford Union, Clerk to the; Scotland Western Asylums Research Institution, Glasgow, Hon. Secretary of; S. G. C.; Miss Spear, Lond.; Saccharin Corporation, Lond.; Mr. H. W. Scriven, Lond.

T.—Mr. D. D. Turner, Devonport; The Retreat, York, Secretary of.

V.—Victoria Hospital for Sick Children, Hull, Secretary of.

W.—Mr. W. Ward-Smith, Shipley; Mr. C. W. Williams, Smallburgh; Fleet-Surgeon E. C. Ward, R.N., Chatham; Worcestershire Asylum, Bromsgrove, Secretary of; Mr. P. Wood, Crawley; Messrs. Widenmann, Broicher, and Co., Lond.; Dr. J. W. J. Willcox, Glastonbury; Mr. A. Wilson, Lond.; West Riding of Yorkshire County Council, Wakefield, Treasurer to.

Y.—Mr. J. H. Yolland, Bromley.